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Child Labor in the Developing World

Making the Invisible Visible

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CHILD LABOR IN THE DEVELOPING WORLD
MAKING THE INVISIBLE VISIBLE

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VOORWOORD (PREFACE IN DUTCH)

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Part 1

Introduction, Method and Model

Chapter 1

Intro duction

1.1 CHILD LABOR IN THE DEVELOPING WORLD

Child labor is a persistent social and economic problem. Although children have always carried out a variety of tasks, child labor began to be a worrying phenomenon since the large-scale employment of children in factories during the Industrial Revolution. During this period, children worked long hours under unhealthy, dangerous, and sometimes even fatal circumstances. It was also during these times that awareness for children's rights and the importance of (compulsory) education progressively grew. The first laws on child labor were implemented with the British Factory Acts; the earliest originated in 1802 and designed to regulate working conditions for young workers in the factories. In the following years and throughout the nineteenth century, maximum work hours were reduced and children obtained more rights and chances to pursue an education.

Nowadays, child labor mostly occurs in developing countries. During the course of the twentieth century, two UN agencies – still important actors today – have fought for the elimination of child labor: the United Nations Children's Fund (UNICEF) and the International Labor Organization (ILO). Their efforts have resulted in several international conventions, aimed at stopping child labor and getting children into school. One of the most important ILO–initiatives is the International Programme on the Elimination of Child Labour (ILO–IPEC). This initiative, which started in 1992, intends to eliminate child labor by national capacity building and global awareness-raising. However, despite these measures and the efforts of donors, NGO's and governments, it has been estimated that still 215 million children are engaged in child labor worldwide (ILO–IPEC, 2010b). Why is the child labor problem so persistent? Obviously, anti-child labor legislation and treaties have failed to a large extent. The most important ILO treaties on child labor are signed by most countries, but if governments do not have the ambition and means to implement and enforce their child labor laws, ratifying a convention remains an empty formality.

Poverty is the most frequently mentioned cause of child labor. Indeed, primarily poor children living in poor countries are engaged in child labor. However, this cannot explain all the differences in the child labor incidence. Recently, for instance, the ILO reported a decline in child labor in the period 2004–2008 (ILO–IPEC, 2010b). This decline partly took place during the beginning of the Global Financial Crisis that hit the developed as well as the developing world. If poverty would be the most important cause of child labor, we would have expected to see an increase in, at least, the supply of child laborers.

Nonetheless, if the financial crisis has led to less international trade, the demand for child labor would be lower, and a decline is to be expected. Besides, the term 'child labor' covers much more than children in sweatshops knitting our carpets or sewing our footballs: children also work at family farms, family businesses and do household chores. Although the ILO includes unpaid family workers in their statistics, housework is excluded. Therefore, it could very well be that the decline in child labor goes hand in hand with an increase in the number of children performing unpaid household chores.

For a good understanding of the child labor problem it is therefore necessary to get a clear picture of every kind of work children are engaged in. While there are numerous publications on child labor, there is no study that covers all the kinds of work done by young children in developing countries. This thesis intends to do that. By studying the involvement of children in commercial work, housework, family business work, and unpaid work outside the household, I hope to make a valuable contribution to our knowledge about the driving factors behind child labor.

1.2 THEORETICAL BACKGROUND

Child labor has been studied intensively by historians, economists and social scientists, but they all tell a different part of the story. Historians often focus on the circumstances of child laborers in factories during the British industrial revolution (Nardinelli, 1980; Kirby, 2003; Hutchins & Harrison; 1903). The most cited historical child labor article, for example, is about the earlier mentioned "Factory Acts" (Nardinelli, 1980). In this paper, Nardinelli shows that the decline of child labor did not begin with the installment of the Factory Acts, but that rising real income and technological change caused the child labor rates to decrease. Child labor laws only accelerated this development.

Economists have shown that the complex child labor problem can be simplified with the help of demand and supply curves in mathematical models; which have helped in making an argument for interventions, such as minimum adult wage policies. In his well-known paper, Levy (1985) applies a model of the household economy to research the relationship between child labor, fertility decisions and mechanization / modernization to child labor in rural Egypt. He argues that substitutes for child labor, such as mechanization and efficient agricultural techniques (e.g. irrigation) go hand in hand with dropping birth rates. Since agriculture has not yet been modernized in various parts of the developing world, Levy's work is still of great value. Another much cited economic article is 'The Economics of Child Labor' by Basu and Van (1998). Their theoretical model is based on two pillars: (1) the empirical evidence that children of wealthy parents are less often engaged in child labor. When parents earn sufficient income, they pull their children out the labor market and send them to school. This is called the luxury-axiom. (2) From a company's point of view, adult and child labor are substitutes: the substitution axiom. Basu and Van's paper has changed economic thinking by showing that there may be two equilibria (instead of one) in the labor market in developing countries: one with low wages and child labor and one with high wages and no child labor. In economic terms, both are equally efficient. More recently, Scoville (2002) has revised and supplemented Basu and Van's model, arguing that not all work done by children is replaceable by adults. According to him, children often are employed to do monotonous, low-productive and agricultural tasks for which hiring adults is too expensive. Scoville concludes that the Basu and Van model might be a good model to explain commercial child labor in sweatshops, but it does not do justice to the reality of many working children in other situations.

Most of the economic child labor literature today is based on human capital theory as developed by T.W. Schultz, Gary Becker, and other authors (Edmonds, 2008; Becker, 1964; Schultz, 1960). This theory regards education as an investment in human capital and child labor can be seen as opportunity costs of schooling. Edmonds (2008) stresses the importance of agency in the decision making process, which is often neglected. However, it does matter if the choice for child labor or schooling is made by the children, their parents, or both.

One of the merits of anthropological research into child labor is that it gives insight into the daily activities of boys and girls in developing countries. For example, in a paper based on data from Murdoch's 'Ethnographic Atlas', Bradley (1993) describes for children living in 97 societies what they do in daily life. In most societies, working children are responsible for low-skilled, tedious tasks. Similar to Scoville, Bradley emphasizes that children generally are involved in tasks which are generally not performed by adults, such as cattle herding. Another merit of the work of anthropologists can be found in the way they are able to give specific details into successes or failures of policies aimed at reducing child labor. For example, in a study on poor children in Kerala (India), Nieuwenhuys (1993) shows that compulsory education had an unintentional side-effect: in order to pay for school clothes and other materials, children had to earn money after school hours. All in all, anthropological work has given us the insight that we need to look at the age and gender dimension of child labor (Nieuwenhuys, 1996) and have a close look at the diverse cultural circumstances in different parts of the developing world (Lieten, 2003).

Important sociological work on child labor involve case studies for specific regions (Bass, 2004) and countries (Buchmann, 2000; Lu & Treiman, 2011). Besides situation-specific knowledge, these studies also emphasize how stratification leads to persistent low levels of education and high child labor involvement of specific groups in society, a situation often referred to by economists as the poverty trap (Emerson & Souza, 2003). Since the sociological concept of 'social capital' partly overlaps with 'social exclusion', sociology also plays an important role in the 'new poverty'- discourse. The key concepts here are 'social exclusion' and 'relative poverty'; they might help to explain why some 'absolute' poor children are involved in child labor while others are not. For example, a lack of social capital in vulnerable poor circles may lead to a marginalized, excluded group in society, which is unable to benefit from schemes or policies aimed at helping them. Moreover, social exclusion can also be a result from discriminating policies, such as in some parts of Turkey, where the majority of child laborers in rural areas are Kurdish children with low access to school and social services (Özbek, 2007).

1.3 THIS THESIS

An important disadvantage of most child labor research is that it focuses on determinants at one level only. This can either be the family level (e.g. Buchmann, 2000; Patrinos & Psacharopoulos, 1997) or the national level (e.g. Kis-Katos & Schulze, 2006; Fan,

2004; Roggero et al., 2007). Parental decisions regarding child labor, however, depend not only on characteristics of parents and their households, but just as much on the presence of job opportunities for children at the local labor market and on the characteristics of the available educational facilities. Therefore, for gaining an encompassing understanding of the roots of child labor, the relevant factors at the different levels (household, community and national) should be studied simultaneously. The insight that child labor should be researched by including factors of both the level of the child/household and the context they live in, has already been acknowledged in the literature for some time (Manacorda & Rosati, 2007; Bashieri & Falkingham, 2006; Kis-Katos & Schulze, 2006), but until now, no large scale comparative research on child labor has been conducted.

Another shortcoming of the child labor literature is that most research concentrates on commercial labor: until recently, there has not been much attention for unpaid children's work. Nevertheless, unpaid work can also be unhealthy and hamper a child's education. The few studies with a focus on unpaid work mostly are case studies (e.g. Goulart & Bedi, 2008; Zabaleta, 2011; Assaad, Levison & Zibani, 2010); hence cross-country comparative research would be a step forward our knowledge about child labor.

This thesis contributes to the existing debate by (1) solving the micro-macro divide, (2) including both paid and unpaid child labor and (3) combining theoretical ideas of earlier-mentioned disciplines into one multidisciplinary framework aimed at understanding the determinants of child labor both at the household level and at the level of the context in which the household lives. In this framework, all possible factors are grouped into three kinds of conditions: resources, structure and culture. Resources are the means by which households can provide their members with food, shelter, education and health, as well as the services, regulations and information available in the context that may help households fulfill these needs. Structure refers to structural characteristics of households (e.g. nuclear or extended family, number of children, absence of parents) and of the context in which they live (e.g. labor market, legal framework). Culture encompasses local and national views of society on childhood, socialization and the role of women.

Furthermore, the availability of advanced statistical software for multilevel analyses allows me to test which factors at which level determine children's engagement in child labor. In addition, this approach makes it possible to research whether effects differ under different circumstances. To test the validity of the model and to get a more detailed insight into the world of child labor, I will empirically test the model on four forms of child labor, namely (1) commercial work, (2) housework, (3) family business work, and (4) unpaid work outside the household.

1.4 AIMS

The aims of this study are fivefold. Firstly, I will give a description of the size of the child labor problem. Secondly, I will introduce a newly developed theoretical framework

that explains child labor at both the household and the context level. This framework is tested with multilevel analysis to determine which factors at the individual and the context level play a role. In order to get an encompassing understanding of child labor in the developing world, this model will be applied to all forms of child labor. Thirdly, I will determine how these factors differ between boys and girls. Fourthly, I will research whether effects of the household level factors differ under the different circumstances in urban and rural areas. Fifthly and lastly, I will describe how the household and context level factors differ between Asia and Africa.

1.5 RESEARCH QUESTIONS

The first research question corresponds with the first aim to describe the size of the child labor problem in the developing world. This first question therefore reads:

1 How high is the incidence of the different forms of child labor in developing countries? How many hours do working children on average spend on commercial work, housework, family business work and unpaid work outside their household?

The second aim of this thesis is to develop a new theoretical framework. To achieve this aim, we first need to know how household characteristics affect the involvement in child labor in developing countries. Furthermore: parents, who are the main decision makers on their children's labor engagement, also take the characteristics of the context into account. When there is no demand for child labor, or when it is forbidden by law, children cannot be engaged in child labor. Parents will also be influenced by persistent cultural value patterns, e.g. about the role of women in the economy. Consequently, my second research question is divided into two parts:

2 A: What is the effect of the characteristics of the household in which a child lives on the engagement in child labor?
B: What is the effect of context characteristics on the engagement in child labor?

Parents may have different ideas about the future for their daughters and sons. Boys, for example, may be expected to inherit the family farm or business and girls to become housewives. To prepare them for these future roles, children may often perform gender-specific tasks when they are young. Boys must help with heavier tasks or learn skills that may help them in their future professions, while girls are expected to help with the household chores and the care for siblings. These gender differences can also be found in commercial work. For example, since in some societies the place of women and girls is in the home, they will only do commercial work when it is home-based. When girls work outside the household, girls and boys participate in different tasks and sectors; for instance, boys are more involved in fisheries and growing cereal crops while girls work

more in the textile industry and poultry farming (Edmonds, 2008). To address these differences between boys and girls, the third research question reads:

3 To what extent do effects of household and context characteristics on the engagement in child labor differ between boys and girls?

Characteristics of the household not only have a direct effect on child labor; the strength of these effects may be weaker or stronger in different contexts. The fourth aim of this thesis therefore is to increase our understanding of the way in which effects of household characteristics on child labor depend on the context in which children live. Since there are many differences in the level of development, (social) infrastructure, and culture between rural and urban areas, I will focus on differences in the background characteristics between those two. The fourth research question of this thesis therefore is:

4 To what extent do effects of household and context characteristics on the engagement in child labor differ between rural and urban areas?

I do not implicitly assume that the driving factors behind child labor are the same for different parts of the developing world. Given that previous research indicates that there are many differences in the causes, incidence and types of child labor between Asia and Africa (e.g. Bhalotra, 2003), I will perform separate analyses for these two regions of the developing world in the second part of the book. The fifth and last research question in this thesis therefore reads as follows:

5 To what extent do effects of household and context characteristics on the engagement in child labor differ between Asia and Africa?

1.6 MODEL

The theoretical model in this thesis unifies theories from economics, sociology and history/anthropology into one theoretical framework. In this model the many factors that are mentioned in the broad child labor literature as determinants of child labor are grouped into three conditions according to the supposed underlying causal mechanisms. These conditions are called resources, structure and culture and are assumed to be located at both the household and the context level.

Resources are the means by which households can provide their members with food, shelter, education and development. Context level resources include the level of development and educational level of the community; they allow parents to earn enough to be able to send their children to school or increase the awareness that schooling is a prerequisite to acquire human capital.

Structure refers to family structure, such as living in an extended family, the number of siblings and to structural characteristics of the context, like the (educational) infrastructure and characteristics of the labor market.

Culture encompasses views on childhood, socialization and the role of women in society. Traditional values on the level of the household are, for instance, reflected by the age difference between spouses. At the context level, dominant value patterns in patriarchal circles are perceived to be cultural traits which may possibly influence children's labor engagement.

Finally, the model assumes that the effects of these mechanisms may have different effects depending on the circumstances; for example, according to the situational dominance hypothesis, resources make less of a difference under more severe situations. We would expect a weaker positive effect of resources, because there are fewer possibilities in these areas.

This book can be regarded as the end product of the research process to develop a sound and clear model for explaining child labor. The final model will be extensively described in Chapter 3. The paper, on which Chapter 6 is based, is historically written earlier in time and I use a less developed version of the model here. The background factors can be placed under the same underlying mechanisms of the final model though.

1.7 DEFINITIONS

Child labor is a complex phenomenon to research. This basically has two reasons. First, a large share of child labor is literally invisible because many children do not work in factories or in the street, but in the realm of the household, doing housework or (unpaid) family business work. Second, there are multiple and (partly) overlapping definitions of child labor in use. In order to study the complex child labor problem, a good working definition of child labor needs to be constructed. For this purpose, I use two conventions of the International Labour Organisation (ILO) as a starting point. Both these conventions are ratified by approximately 160 countries and both refer to children in employment. The first one speaks not about child labor per se but about the minimum entry age of employment:

1 Convention no. 138: Minimum Age for Admission to Employment: "prohibits all economic activity by children beneath the age of 12 and permits light work only for 12 and 13 year-olds in developing countries" and "it calls for universal compulsory education through the age of 14 in developing countries".

With ratifying ILO's convention no. 138, a country promises to make the effort to "pursue a national policy designed to ensure the effective abolition of child labor and to progressively raise the minimum age for admission to employment or work to a level consistent

with the fullest physical and mental development of young persons". By signing the convention, the member states promise that the minimum age is not less than the completion age of compulsory education in their country and not less than 15 years. Developing countries, however, are allowed to lower the age to 14 years.

The second convention is about the worse forms of child labor and reads:

2 Convention no. 182: Concerning The Prohibition and Immediate Action for the Elimination of the worst Forms of Child Labour: "prohibits and targets for urgent elimination of the worst forms of child labour for all children below the age of 18".

In the spirit of these conventions, the ILO itself defines child labor as "work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development." (ILO, 2012).

Child labor refers to work that:

- "is mentally, physically, socially or morally dangerous and harmful to children; and
- interferes with their schooling by:
- depriving them of the opportunity to attend school;
- obliging them to leave school prematurely; or
- requiring them to attempt to combine school attendance with excessively long and heavy work." (ILO, 2012)

Most developing countries have made efforts to combat child labor, both in national laws and international agreements. There are some differences, however. From the countries studied in this thesis, Somalia and India are the only countries that have not ratified ILO's Convention no. 182 on the worst forms of child labor. Somalia, India, Liberia and Bangladesh have not ratified Convention no. 138 on the minimum age of employment either.

Employing the ILO–definition, child labor is much broader than paid employment of children alone. In this study, child labor is all work done by children under the age of 14 that hampers their health or education. Employing this new working definition does more justice to the reality of millions of children in developing countries.

In this thesis, child labor is divided into four categories: (1) commercial work, (2) housework, (3) family business work and (4) unpaid work outside the household. In separate chapters, I will study the causal mechanisms behind these kinds of work. In order to get a good understanding of the concepts used in this thesis, the different kinds of labor are defined below:

- **Commercial work**: is paid (either in cash or kind) work for someone who is not a member of the household in which the child lives.

- **Housework**: refers to work running a household and consists of chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children.
- **Family business work**: is work done for members of the household, but housework is excluded. It includes 'any other family work', for example on the farm or in a business or selling goods in the street.
- **Unpaid work outside the household**: This category encompasses all unpaid work for someone who is not a member of the household in which the child lives.

By making this categorization, I hope to get a clearer understanding of the world of child labor. It must be noted, however, that the group of bonded child laborers and other worst forms of child labor (such as child prostitution or child soldiers) are excluded, because the information needed on these vulnerable groups is generally not included in household surveys, which form the empirical basis of this thesis.

As mentioned earlier, it is generally the parents who make the child labor decision. In this process, parents take the characteristics of the child, the household and the context into account. In the literature, various terms are used to describe these different spheres (or levels). The literature speaks, for example, about the supply and demand side of child labor when discussing characteristics of the child's family and local labor market. The context level is also often referred to as the community level. In this thesis, I will use a more inclusive terminology to describe the different spheres, because community characteristics and the demand for child labor and are only a dimension of the context in which the child lives.

Household factors: refers to characteristics of the child and the household. Characteristics of the child are for example its age, gender and birth order. Characteristics of the household are the socio-economic characteristics of the parents, its size, the number of sons and daughters, or whether it is an extended family.

Context factors: refers to characteristics of the context. These factors relate to the demand side, community factors, culture, etc. In this study the context factors are measured at the subnational level, hereafter called "district" and the national level, also referred to as the country level.

1.8 THE DATA

Quantitative comparative studies are restricted by the availability of data. Early cross-country analyses became possible with the LABORSTA database from ILO. Unfortunately, unpaid work within the household is not included in LABORSTA, so these early figures probably substantially underestimate the size of the problem (Edmonds, 2008). The rising availability of detailed household surveys since the 1990s, however, allows for

large-scale cross-country research on issues like school attendance, women's employment and child labor in developing countries. For studying child labor, surveys such as the Demographic and Health Surveys (DHS) and UNICEF's Multiple Indicator Surveys (MICS) have proven to be very useful. Originally, the DHS surveys were designed for monitoring population, health, and nutrition in developing countries, and the MICS for monitoring the progress towards an internationally agreed set of mid-decade goals in 1995. Although these household surveys were not in the first place designed for scientific research into the causes of child labor, they have already demonstrated their value in numerous scientific and policy papers (DHS, 2012; UNICEF, 2012).

In this thesis I use data from over 20 DHS and MICS surveys. For the purpose of studying child labor, the MICS is the most useful data source, because the questions on children's engagement in child labor of the third wave (2005–06) are standardized. The fact that the questions MICS-surveys contain the same wording, albeit in translation for each country, makes comparative research such as in this study much easier. Further, a unique feature of the MICS is that these surveys contain questions on the time involvement in the different kinds of work. Still, information on child labor is available in a substantial number of DHS-surveys; hence both DHS and MICS surveys will be used for this research.

To see which factors determine whether a child is engaged in commercial child labor, I use data for 18 countries from DHS in Chapter 3 to subject the model to a first empirical test. Because the questions regarding to the types of work and time involvement are standardized and more detailed in the MICS surveys, I use MICS data for 16 countries in Africa and Asia for part 2 (Chapter 4 to 7) of this thesis. The context information about culture, position of women, and educational facilities, is generally proxied by aggregating from the household surveys to the district level.

1.9 OVERVIEW OF CHAPTERS

The outline of this thesis is as follows. In Chapter 2, I will give a description of the data and method(s) that will be used. The theoretical model is described in Chapter 3. In this chapter, this model is also subjected to a first empirical test focusing on the engagement in commercial child labor. I will do this by applying multilevel analysis on data for 239,120 children living in 221 districts of 18 developing countries in Latin America, Africa and India.

Part 2 (Chapter 4 to 7) focuses on child labor in Asia and Africa. In Chapter 4, using data for approximately 178,000 children living in 16 countries, I provide descriptive statistics for the involvement in commercial work, housework, family business work and unpaid work outside the household. These statistics are derived from the MICS. In Chapter 5 to 7, I will use the theoretical model to explain the variation in hours worked in the four distinguished types of child labor. Chapter 5 will focus on the hours spent on commercial work. In Chapter 6, I explain the driving factors of the involvement in housework and family business work, such as working at the family farm or selling

goods in the streets for the family business. Chapter 7 is about unpaid work outside the household.

By disentangling the different forms of child labor in this systematic way and providing empirical information on children's engagement in these four forms of child labor, this thesis aims to make a valuable contribution to existing child labor research. By combining theories from various disciplines into one theoretical model and by systematic hypothesis testing, this model is thoroughly tested. Furthermore, because I not only focus on commercial work, but also research the incidence and determinants of neglected forms of unpaid labor, this thesis offers a more detailed insight into the reality of working children throughout the developing world.

In part 3 of this thesis I will reflect upon my findings. I will describe the relationship between child labor and school enrollment in Chapter 8. Chapter 9 concludes. In this chapter, the results in this thesis are summarized to answer the five research questions. Furthermore, I will also give some directions for policy making and future research.

Chapter 2

data and method

2.1 INTRODUCTION

In this chapter I give an overview of the data and methods used in this thesis. This chapter is organized as follows. Firstly, the data are introduced in section 2.2. In section 2.2.1 a description of the DHS-data used in part 1 of this thesis and an overview of variables are provided. Subsequently, I will do the same for the MICS-data in 2.2.2. In section 2.3 the method(s) are introduced and discussed.

2.2 DATA

All the data used in this thesis are also part of the Database Developing World (DDW; www.datdevworld.org). The DDW is a large infrastructure containing datasets for more than 100 developing countries with information on individuals, the households they live in, as well as context information at the sub-national and national level (DDW, 2012).

2.2.1 DESCRIPTION OF THE DHS DATA

The data used in Chapter 3 are derived from the Demographic and Health Surveys (DHS). These are large representative household surveys held since the 1980s in many developing countries. I use recent surveys for eighteen countries; Benin 2006, Bangladesh 2004, Chad 2004, Congo DR 2007, Congo-Brazzaville 2005, Egypt 2005, Liberia 2007, Morocco 2003, Mali 2001, Malawi 2004, Senegal 2005, Sierra Leone 2008, Uganda 2001, Colombia 2000, Dominican Republic 2007, Nicaragua 2001, Peru 2004–2008 and India 2006.

The Demographic and Health Surveys are household surveys that provide data on population, health, and nutrition; sponsored by USAID. They consist of a household survey and a women's survey. The household surveys contain information about household characteristics (e.g. size, type of housing, urbanization etc.) and general information about each of the household members (such as age, school enrollment, relationship to household head etc.). The women's surveys are held amongst women aged 15–49 and provide detailed information on literacy, education, employment, reproductive health issues, decision making and domestic violence, women's and children's health, nutrition and fertility. Many, but not all, DHS-surveys also contain a male survey, with similar detailed questions asked to eligible men. For details on the data, see www.measuredhs.com.

The countries used for Chapter 3 of this thesis are chosen because the DHS data included information on the labor market participation of young children. For most of these countries, this was collected through questions in a specific child labor module asked to potential child laborers under a certain age. The other surveys contained country-specific questions about the economic activities in the week before the survey that were asked to all household members.

Table 2.1 presents an overview of the countries, the number of districts for which context data could be included, survey year, household survey response rate and number of respondents of the household sample. Table 2.1 shows that the overall response

rate is high. In all but two countries, it is above 95 percent. The response rate in Nicaragua and Colombia is lower, but with over 90 percent still very high.

VARIABLES USED FROM DHS SURVEYS

Dependent Variable

In the analyses based on DHS data in Chapter 3, child labor is measured by a constructed dummy variable indicating whether (1) or not (0) the child performed any economic activity for non-household members in the week before the survey. Because questions on child labor are not standardized in DHS surveys, I recoded the relevant country-specific variables into one new variable that is the same for each country.

Independent Variables

Independent variables at the household level are socio-economic characteristics (parental education and occupation, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Since income is lacking in most of the surveys, household wealth was used as an alternative. Household wealth is measured by an index constructed on the basis of household assets, such as TVs, cars, telephones, and

Table 2.1 Data information DHS data

World region	Country	Number of districts	Household survey year	Response rate	Respondents
Latin America	Dominican Republic	32	2007	99.2	8,212
	Colombia	12	2000	92.9	45,291
	Peru	25	2004–2008	99.2	97,211
	Nicaragua	3	2001	92.5	58,209
North Africa	Egypt	26	2005	98.9	106,635
	Morocco	15	2003	98.8	60,795
West Africa	Benin	6	2006	99.1	86,515
	Liberia	6	2007	97.2	33,456
	Mali	9	2001	97.9	64,116
	Senegal	4	2005	98.5	63,494
	Sierra Leone	14	2008	97.6	41,608
Central Africa	Chad	8	2004	99.4	27,879
	Congo DR	11	2007	99.3	47,228
	Congo-Brazzaville	11	2005	99.2	29,588
East Africa	Uganda	4	2001	95.8	36,528
Southern Africa	Malawi	3	2004	97.8	58,886
Asia	Bangladesh	6	2004	99.8	51,255
	India	26	2006	97.7	515,507

housing characteristics (such as floor material, roofing, toilet facilities). Using a method developed by Filmer and Pritchett (1998), all households within a country are ranked from low to high on the basis of their assets and subsequently divided this variable into wealth deciles.

Father's occupation is measured with three categories: (1) farm, (2) lower nonfarm (sales, service and manual occupations), (3) upper nonfarm (professional, managerial, technical and clerical occupations). Employment of the mother is a dummy indicating whether (1) or not (0) the mother is employed. Education of the father and mother are measured in years. Children with a missing parent were given the mean score of the other children in the database on the variables indicating characteristics of the parents. Because there are dummies indicating whether or not the mother or father was missing in the model, this procedure leads to unbiased estimates of these variables (Allison, 2001, note 4).

Age of the child is measured in years. Number of sisters and brothers and birth order are measured by interval variables. Presence of the parents is measured with two dummy variables indicating whether (1) or not (0) the mother or father is missing from the household. Extended family structure is measured with three categories (0) nuclear family, (1) more than two adults in the household but no grandparents, (2) more than two adults in the household including grandparents. To indicate traditional value patterns at the household level a dummy indicating whether the mother had her first child under the age of eighteen (1) and the age difference between spouses (interval variable) are included. A dummy indicates whether (1) or not (0) the household lives in a rural area.

District level of development is measured by the TV-index, which reflects the percentage of households with a TV in each region (e.g. Monden & Smits, 2009). To indicate the level of the local schooling facilities, the average number of years of education for men above the age of 13 is included. The proportion of men in lower nonfarm labor is included as an indicator of the availability of jobs for uneducated laborers and hence the demand for child labor. As a measure of traditionality of the district the average difference in age between husbands and wives (age husband minus age wife) is used. In more traditional societies, the age difference between husbands and wives tends to be larger than in more modern societies, so the higher the mean age difference, the more traditional a district is expected to be. Patriarchy is indicated by the percentage of married couples living in households with grandparents from father's side, indicating the tendency of parents to let their daughters marry into the family of their future husbands.

To compute interaction terms between the independent variables and gender and urbanization, centered versions of the involved variables were used. The main effects, therefore, can be interpreted as average effects (Jaccard & Turrisi, 2003). Given the large number of possible interactions, only significant interactions were included.

Table 2.2 presents an overview of the (unweighted) percentage distributions, means and standard deviations of the independent variables used in the analysis in Chapter 3. The figures in Table 2.2 show that there are many differences among the 18 countries

studied in Chapter 3. This can be best illustrated by the averages and standard deviations of the district variables. For example, the average years of male education is around 7 years, but in the district with the highest level of education men receive 12.1 years of education. This is a district in Peru, the country with the highest average years of male education. Figure 2.1 to 2.6 will describe the country differences in more detail.

Table 2.2 Descriptive statistics: Percentages of children in category or mean of the independent variables from DHS

Household factors	**% or mean**	**Std. deviation**
Socio Economic Factors		
Education father (years)	5.3	5.1
Occupation father farm	19.4 %	0.4
Occupation father lower nonfarm	21.7 %	0.4
Occupation father upper nonfarm	6.8 %	0.3
Occupation father missing	52.1 %	0.5
Education mother (years)	3.8	4.7
Mother is not employed	36.6	0.5
Mother is employed	48.9 %	0.5
Occupation mother missing	14.5 %	0.4
Wealth Index	5.3	2.9
Demographic factors		
Age	10.5	1.7
Father missing	24.2 %	0.4
Mother missing	13.6 %	0.3
Extended family with grandparents	10.5 %	0.3
Extended family without grandparents	37.5 %	0.5
Biological child	90.2 %	0.3
Birth order child	2.4	1.5
Number of sisters	1.4	1.4
Number of brothers	1.6	1.5
Cultural Factors		
Mother had first child < 18	31.1 %	0.4
age difference between spouses	7.2	5.8
Context factors		
Living in rural area	59.0 %	0.5
District level of development	0.5	0.3
Mean years education adult men	6.9	2.6
Proportion men lower nonfarm labor	0.2	0.2
Age difference between spouses	7	2.7
Household has grandparents from father's side	0.1	0.1

Figure 2.1 presents the country averages for living in a rural area. For most of DHS countries studied in this thesis, more than half of the population lives in the countryside. Congo Brazzaville is an example of a country with a relatively large urban population and Mali, Uganda and Malawi can be considered to be very rural countries.

Figure 2.2 shows averages for the measure for the district level of development: the TV-index. These averages show that there is much variation in Africa. Low developed countries are Uganda, Malawi, Liberia and Chad, with less than 10 percent of the household owning a television; whereas in Egypt the great majority of the households (around 90 percent) has a TV. In Latin America and Asia, there is less variation, but also here we can also make a clear distinction between richer and poorer countries.

In Figure 2.3 country averages for years of attained education by males are presented. As mentioned before, men received most education in Peru. The difference with the other Latin-American countries is noteworthy. Especially in Nicaragua, the average edu-

Figure 2.1 DHS Country averages living in a rural area

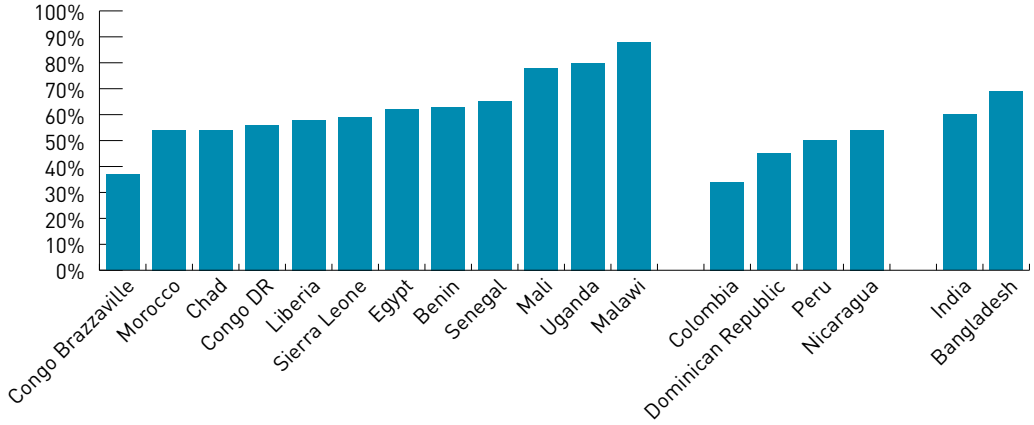
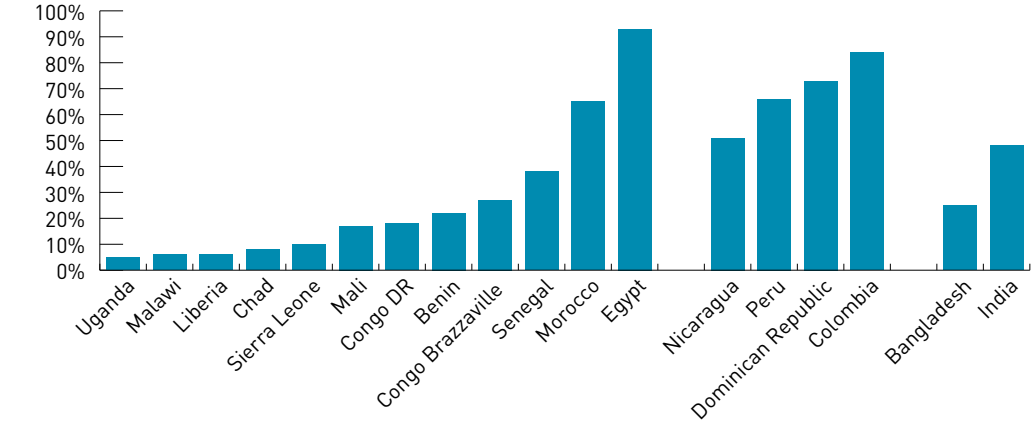


Figure 2.2 DHS Country average households with television



cation attained is, with around 6 years, rather low. Not unexpected is the finding that the average education attained is lowest in Africa. The situation in Mali can be considered as most problematic, with an average resembling only a few years of primary education.

When we compare Figure 2.3 with Figure 2.4, interesting patterns are revealed. In Figure 2.3, I showed that, on average, Egypt has the highest educated population in Africa, so it might not entirely come as a surprise that in Egypt only a small proportion of men are engaged in unskilled manual professions. However, in Peru, with its high average of years of education attained, almost 40 percent of adult males are engaged in an unskilled manual occupation. When there is no demand on the job market for educated people, as seems to be the case in Peru, parents might be less inclined to invest in the education of their children. At the same time, a higher demand for unskilled manual laborers may result in a higher demand for child laborers.

Figure 2.5 presents the average age differences between spouses for Africa and

Figure 2.3 DHS Country average years adult male education

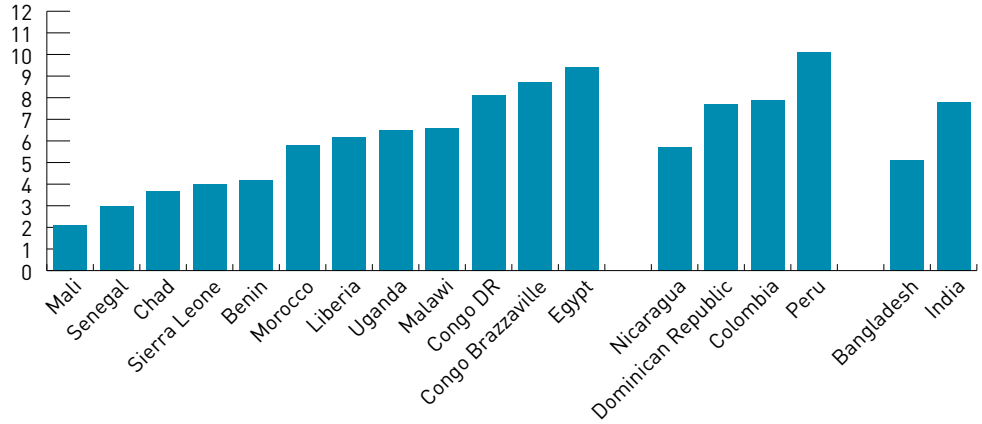
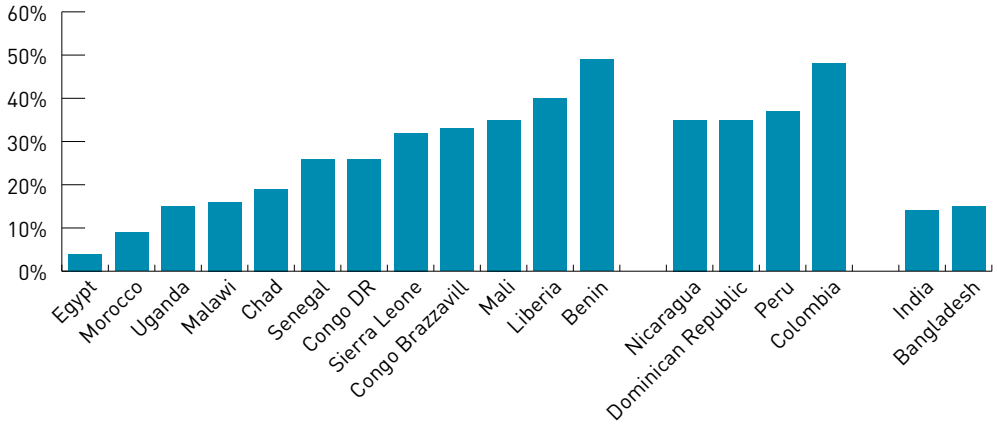


Figure 2.4 DHS Country average men in unskilled manual occupations



Asia. The higher the age difference is, the more traditional a country is supposed to be. We see that Senegal (13 yrs.), Dominican Republic (6 yrs.) and Bangladesh (10 yrs.) are the most traditional countries in Africa, Latin America and Asia respectively. Since the average age differences in Latin America are much smaller than in Africa, Latin America seems less traditional on the whole.

In Figure 2.6, I present averages for the second cultural indicator: patriarchy, measured by the proportion of co-residing grandparents of father's side. There are interesting differences across the countries and continents. Compared to Latin America, with an average of around 15 (in India) to 20 percent (in Bangladesh) households with co-residing grandparents from father's side, Asia can be considered to be a patriarchal region. In Africa, many cross-country differences emerge. According to both cultural indicators used in my analyses, the position of women is worst in Senegal and best in Malawi and Uganda.

Figure 2.5 DHS Country average households age difference between partners

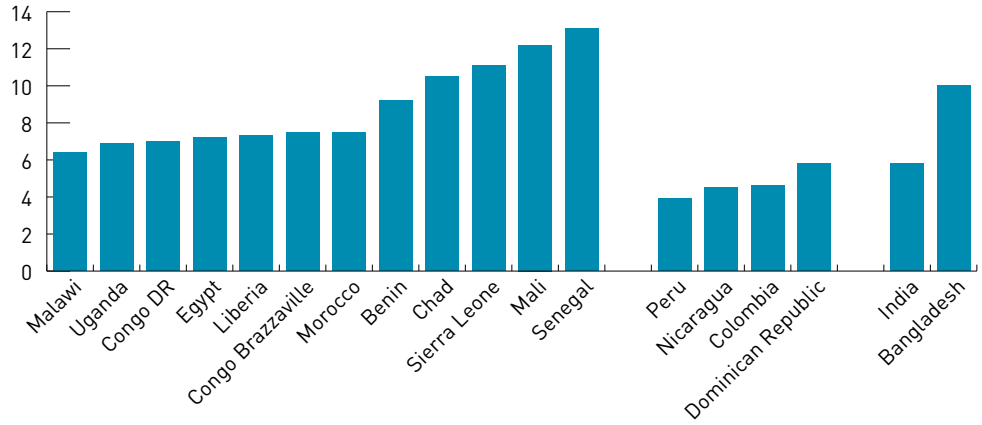
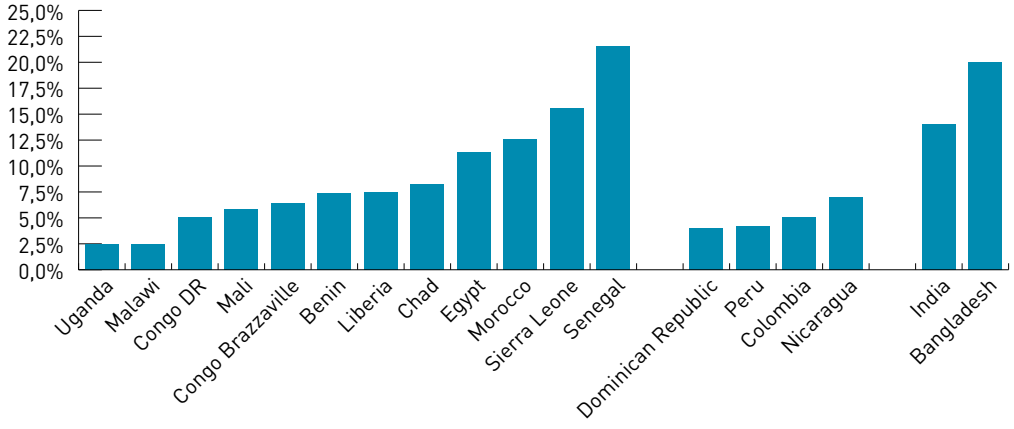


Figure 2.6 DHS Country average households has grandparents from father's side



After having discussed the DHS data that will be used in Chapter 3, we now turn the discussion of the MICS data that is used in Chapter 4 to 8.

2.2.2 DESCRIPTION OF THE MICS DATA

Table 2.3 presents an overview of the countries, the number of districts, survey years, household survey response rate and number of respondents of the household sample of the MICS-sample used in this thesis. Because Yemen is geographically very close to Africa and resembles its African neighbors more than its Arab neighbors, Yemen was included in the African subsample.

As can be learned from Table 2.3, response rates in the MICS are also very high. Yemen has the lowest response rate, but it is still more than 90 percent. All surveys were held in the years 2005 and 2006, Mauritania being the sole exception with 2007. Bangladesh, Malawi and Sierra Leone are the only countries which appear in both the DHS and MICS-surveys used for this thesis. For Malawi and Bangladesh, I used a different regional division which allowed me to include more districts. Because the MICS-survey sample sizes are large, there is ample variation at the district level for a multilevel analysis.

Table 2.3 Data information MICS data

World region	Country	Number of districts	Household survey year	Response rate	Respondents
Africa					
	Côte D'ivoire	11	2006	100.0	54,402
	Gambia	8	2005–06	98.4	44,877
	Ghana	10	2006	94.8	24,947
	Guinea Bissau	9	2006	97.4	41,312
	Sierra Leone	14	2005	99.3	42,719
	Togo	6	2006	98.9	30,542
	Mauritania	13	2007	97.0	59,572
	Burundi	5	2005	99.8	40,634
	CAR	16	2006	98.0	117,23
	Malawi	6	2006	97.9	131,021
	Somalia	18	2006	99.5	33,959
	Yemen	8	2006	90.3	26,088
Asia					
	Syria	14	2006	95.7	107,365
	Thailand	4	2005–06	95.8	137,006
	Vietnam	8	2006	94.1	35,544
	Bangladesh	64	2006	92.5	301,732

VARIABLES

Dependent Variables

The questions on the engagement in work for others outside their household in the MICS surveys are formulated as follows: "During the past week did (name) any kind of work for someone who is not a member of this household?" and if answered with yes: "For pay in cash or kind" (which could be answered with "Yes, for pay", No, unpaid" and "No") and: "About how many hours did he/she do this work for someone who is not a member of this household?" I constructed two variables on the basis of these questions indicating how many hours a child spent on paid and unpaid labor outside the household in the previous week. For the activities in the child's household I used the following questions in the child labor module. For housework: "During the past week did (name) help with household chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children?" and if answered with yes: "About how many hours did he/she spend doing these chores?" For family business work: "During the past week, did (name) do any other family work (on the farm or in a business or selling goods in the street)?" and if answered with yes: "About how many hours did he/she do this work?" The dependent variables have a minimum value of 0 hours and a maximum of 95 hours[1]. In the descriptive analyses of Chapter 4, I will give an overview of the incidence of these types of child labor for each country.

Independent Variables

Independent variables at the household level are socio-economic characteristics (parental education, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Because income is lacking in most of the surveys, household wealth is used as an alternative. Household wealth is measured by an index constructed based on household assets, such as TVs, cars, telephones, and housing characteristics, such as floor material, roofing, and toilet facilities. Using a method developed by Filmer and Pritchett (1998), all households within a country were ranked from low to high based on their assets and this variable was subsequently divided into wealth deciles. As the assets available in the datasets differed among the countries, separate indices for the countries had to be constructed. My wealth variable therefore indicates relative wealth. Landownership is measured with a dummy variable indicating whether (1) or not (0) any member of the household owns land that can be used for agriculture. Ownership of cattle is measured with a dummy variable indicating whether (1) or not (0) a household owns livestock, herds, other farm animals, or poultry. As the variables for ownership of land and cattle were lacking for three of the Asian countries, they are not included in the analyses for Asia. The presence of tap water and electricity are measured with a dummy indicating whether (1) or not (0) these facilities were present in the dwelling.

Education of the father is measured with three categories: (1) none, (2) at least some primary and (3) at least some secondary. Given the low educational levels of the mothers

in these countries, their education was measured with a dummy indicating whether (1) or not (0) the mother had completed primary education. For children with a missing parent, the dummy variable adjustment method (Allison, 2001) was used to address missing values on the variables indicating characteristics of the parents. In this procedure, the cases with missing values get the mean of the valid values and a dummy is added to the model to identify the cases for which the mean was substituted. According to Allison (2001, p. 87), this dummy adjustment procedure may lead to unbiased estimates of the variables if the missing values are due to non-existence of the respective cases, as is the case here with the characteristics of parents who are missing. As a proxy for agricultural parental occupation for the analyses in Chapter 7, I constructed a dummy variable whether (1) or not (0) a household owns both land that can be used for agriculture and livestock, herds other farm animals, or poultry. As these variables for ownership of land and cattle were lacking for three of the Asian countries, no indicator for agricultural occupation was included in the analyses for Asia.

Age of the child is measured in years. Number of sisters, brothers, young children and birth order are measured by interval variables. Presence of the parents is measured with two dummy variables indicating whether (1) or not (0) the mother or father is missing from the household. Extended family structure is measured with three categories (0) nuclear family, (1) more than two adults in the household but no grandparents, (2) more than two adults in the household including grandparents. Economic context variables are measured in several ways. Urbanization is measured by a dummy indicating whether (1) or not (0) the household lives in a rural area. The influence of education and educational infrastructure is measured by the average number of years of education attained for people above the age of 13 in the district.

As a measure of traditionality and patriarchy of the district I use the mean difference in age between husbands and wives. In more traditional societies, husbands tend to be (much) older than their wives. The higher the mean difference, the more traditional a district is supposed to be. Patriarchy is indicated by the percentage of married couples living in households with grandparents from father's side, indicating the tendency of girls to marry into the family of their future husband.

National development is measured by national GDP per capita (constant 2000 international dollar) derived from World Bank (2010).

Besides models with direct effects, models with interactions between the independent variables and gender and urbanization are estimated. Similar to the analyses with the DHS data, centered versions of the involved variables are used, and consequently the main effects can be interpreted as average effects.

Table 2.4 presents an overview the (unweighted) percentage distributions, means and standard deviations of the independent variables used in the analysis in Chapter 4 to 8.

The many differences between Asia and Africa point into the direction of a higher level of development in Asia. For instance, in Asia parental educational levels are higher.

Besides, there are fewer single parent families in Asia, which could mean that children are raised under more stable family circumstances. Furthermore, because families are smaller in Asia, children may not have to compete for resources. The national and district level of development and the district mean educational level are higher in Asia. The same holds for the percentage of households with electricity. However, the percentage of households with access to tap water is about the same in both continents. The average

Table 2.4 Descriptive statistics: Percentages of children in category or mean of the independent variables from MICS

	Asia		Africa	
Household factors	**% or mean**	**Std. deviation**	**% or mean**	**Std. deviation**
Socio Economic Factors				
Education father none	30.2 %	0.46	48.9 %	0.50
Education father primary	31.4 %	0.46	34.2 %	0.47
Education father > primary	38.4 %	0.49	16.9 %	0.37
Education mother primary or more	61.8 %	0.49	38.8 %	0.49
Having land & cattle	63.6 %	0.48	72.4 %	0.45
Wealth Index	5.3	2.85	5.4	2.88
Access to running water	25.3 %	0.43	25.5 %	0.44
Household has electricity	70.5 %	0.46	21.3 %	0.41
Demographic factors				
Age	10.4	1.70	10.4	1.72
Father missing	14.1 %	0.35	35.8 %	0.48
Mother missing	1.5 %	0.12	5.2 %	0.22
Extended family with grandparents	22.4 %	0.42	39.4 %	0.49
Extended family without grandparents	10.0 %	0.30	6.9 %	0.25
Biological child	99.4 %	0.08	96.3 %	0.19
Birth order child	1.9	1.02	2.3	1.35
Number of sisters	1.0	1.10	1.6	1.44
Number of brothers	1.1	1.10	1.7	1.52
Number of children <5 in household	0.5	0.72	1.1	1.17
Context factors				
Living in rural area	63.6 %	0.48	72.4 %	0.45
District level of development	0.6	1.00	0.2	0.22
Mean years education adults	7.5	0.75	5.4	1.58
Age difference between spouses	7.1	2.53	8.6	2.64
Household has grandparents from father's side	0.1	0.06	0.1	0.05
GDP per capita	1004.4	842.40	345.0	212.51

age difference between spouses is somewhat higher in Africa, but the percentage of households with grandparents from father's side does not differ between the continents. Almost two-third of children in Asia and almost three quarter in Africa live in rural areas.

Figure 2.7 shows that, except for Thailand and Syria, the majority of the people live in rural areas. Generally speaking, Asia is slightly more urbanized than Africa and there could be a higher demand for child laborers in non-agricultural activities. In Africa, the demand for child labor will possibly be concentrated in rural areas and agriculture.

Figure 2.8 shows national averages for the TV-index. As I concluded earlier: Asia is more developed. However, the indicator for the district level of development suggests that Thailand and Syria substantially drive up the average; Bangladesh and Vietnam are

Figure 2.7 MICS Country average living in a rural area

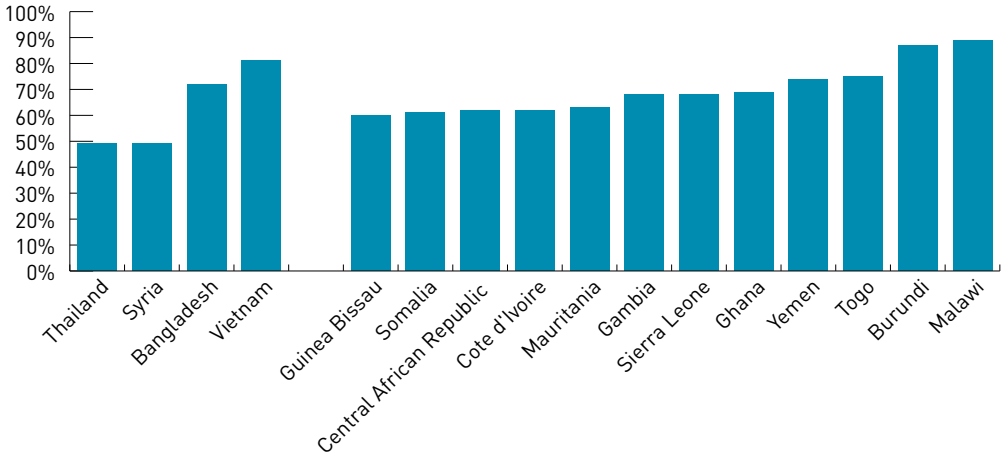
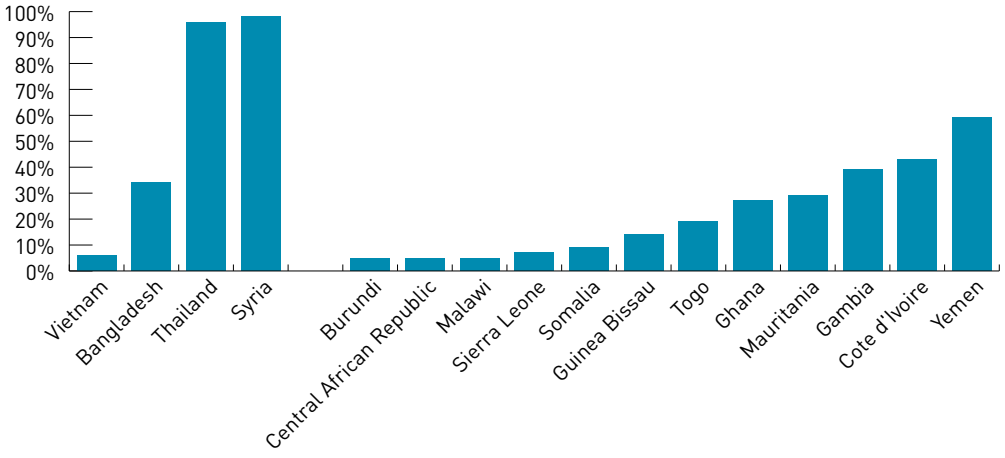


Figure 2.8 MICS Country average households with television



relatively poor. The differences in Africa are noteworthy. Although I considered Yemen to be comparable to other African countries, it is the richest country in this African sub-sample. However, the differences between the richest and the poorest countries located on the African continent (Cote D'Ivoire and Burundi) are also substantial.

To some extent, differences in the level of development are also reflected through the educational infrastructure (Figure 2.9). Interesting patterns emerge. Although households in Vietnam and Bangladesh often do not own a television set, the population is rather highly educated. Compared to the Asian average, the average educational level in Yemen is much lower. This finding justifies my decision to include this country in the African sub-sample.

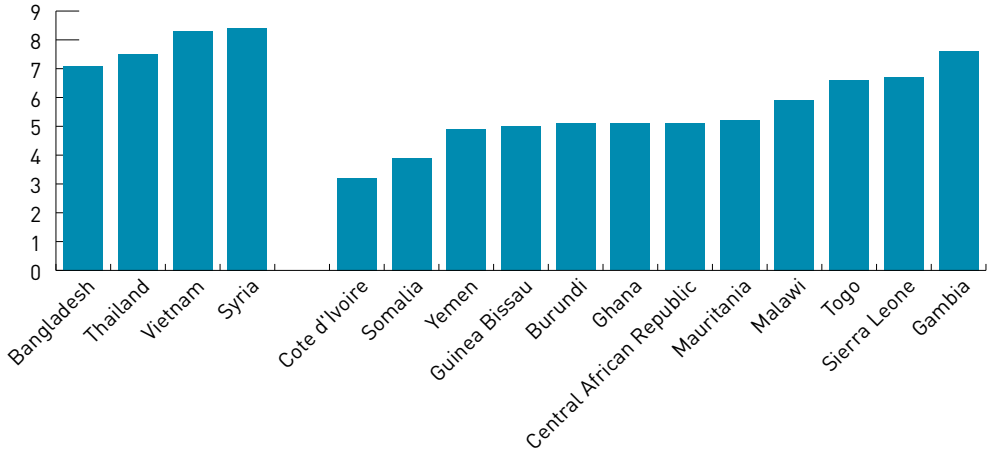
The average age difference between partners, as summarized in Figure 2.10, reinforce the earlier finding that Bangladesh is a very traditional country. Although the average age of 9 years is somewhat lower than the 10 years in the DHS-sample, it corresponds with this average. In Gambia and Sierra Leone, both countries with a large Muslim community (CIA World Factbook, 2009), the average age differences between spouses (with 13 and 11 years respectively) are highest.

Figure 2.11 summarizes country averages for patriarchy. The patterns are quite similar to those in Figure 2.9. Exceptions are, among others, Yemen and Vietnam, countries with relatively low age differences between spouses, but with more patriarchy (around 15 and 10 percent respectively). As these numbers are country averages, there are also differences within the countries in my study. These district differences will be used to explain the involvement in the four kinds of child labor researched in this thesis.

2.3 METHODS

Both for the DHS analysis in Chapter 3 and for the MICS analyses in Chapters 4 to 8, the effects of family background characteristics and contextual factors on child labor

Figure 2.9 MICS Country average years adult education



are studied using descriptive (bivariate) analyses and multilevel regression analysis (also called mixed models or hierarchical linear models; compare Hox, 2002; Snijders & Bosker, 1999; Raudenbush & Byrk, 2002; West, Welch & Galecki, 2007). I apply three-level multilevel models because I use data on families nested within districts nested within countries. One of the most important advantages of the large samples used in this thesis is the ample variation at the district level which allows for including multiple explanatory factors at this level. That is why, in most analyses, the context is represented by district level variables. In Chapter 6, I also add GDP per capita as a country level control variable. That does not mean that I do not check the country variation in the other analyses: the country variation is accounted for by its corresponding intercept. In all analyses robust standard errors (sandwich estimators) are used.

Figure 2.10 MICS Country average age difference between partners

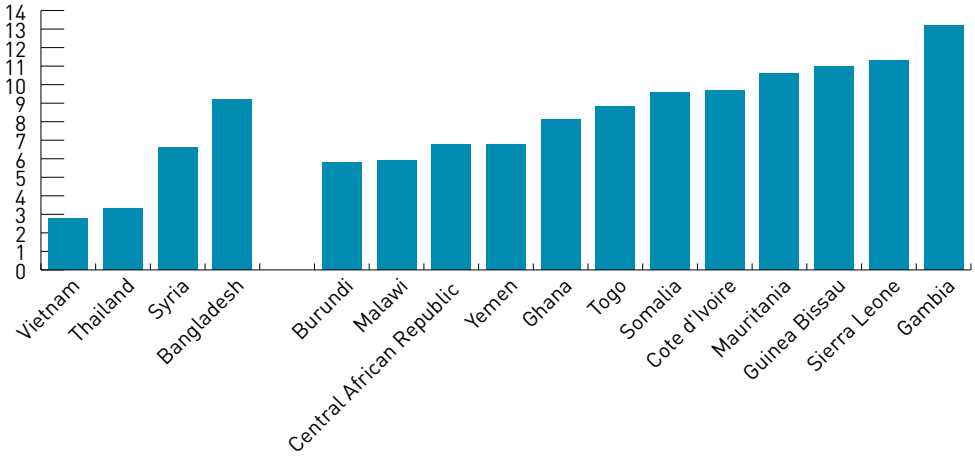
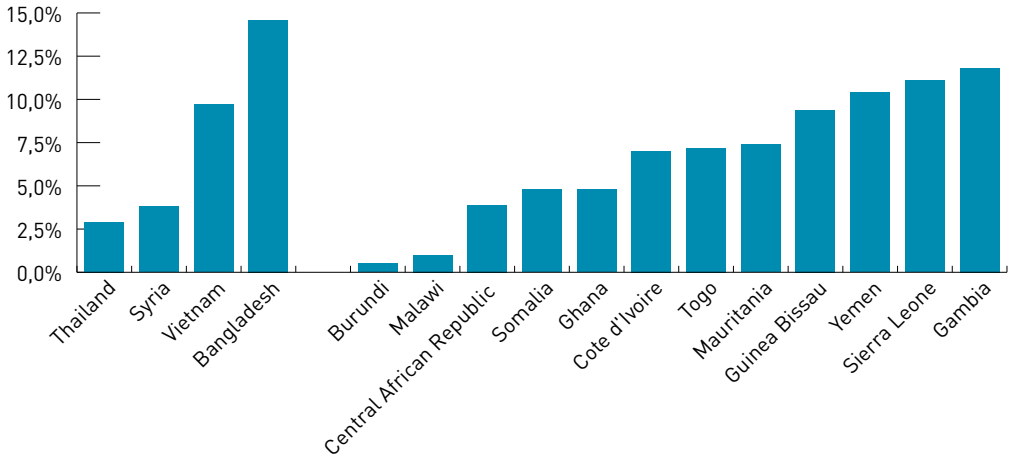


Figure 2.11 MICS Country average household has grandparents from father's side



In Chapter 3, the dependent variable is a dummy variable indicating whether (1) or not (0) the child performed any economic activity for non-household members in the week before the survey. I will first describe the incidence of child labor and present some bivariate relationships with background variables such as urbanization and wealth. Because the dependent variable is dichotomous I will use multilevel logistic regression analysis for the multivariate part of this chapter.

In Chapter 4, I will use the MICS-data to present descriptive statistics on the hours spent on commercial work, housework and family business work and unpaid work outside the household. I will also discuss the variance components of the multilevel models ran on the MICS data in Chapter 4. To determine the variance to be explained by factors at the different levels, I will compute the intraclass correlations rho (ρ), or Variance Partition Coefficients (VPC) (Snijders & Bosker, 1999; Goldstein, 2011). The analyses are estimated with MlwiN (Rasbash et al., 2005). In this analysis, also the nearby level of the cluster (village, neighborhood) is included. The variance components can be interpreted as the variance to be explained at the household and context level. Although it will be of interest to many readers, it is difficult to give an overview of the explained variances of the models, as using R^2 as a measure for the goodness of fit of multilevel models is problematic. Because of the structure of the multilevel model, there are as many R^2's as there are levels and no total one. As is common practice, I therefore focus in this thesis on the significance and the direction of the effects, rather than the explained variance or goodness of fit.

In the analyses of Chapter 5, 6 and 7 the dependent variable is continuous and I apply multilevel regression analyses for interval dependent variables. The district and country differences in child labor are dealt with by estimating random intercepts at the district and country level. This can be represented by a model with a response Y_{ijk} (hours spent on child labor) for child i in district j of country k given by the following equation:

$$\gamma_{ijk} = \beta_0 + \beta_1 x_{ijk} + c_{jk} W_{jk} + \gamma_k Z_k + u_{0jk} + v_{0k} + e_{0ijk}$$

In this equation β_0 represents the mean number of hours spent on child labor across the sample. X_{ijk}, W_{jk} and Z_k represent vectors of household, district and country-level independent variables. The parameters u_{0jk} and v_{0k} represent the random differentials from the overall mean at the district and the country level. In Chapter 6, explanatory variables for all three levels are included; GDP per capita was used as a control factor at the country level for the African subsample. The Asian subsample was, with 4 countries, too small to include a national level variable.

All analyses are restricted to children aged 8–13. The upper limit was chosen because the ILO–conventions on child labor permit light work for 14 and 15 year-olds in developing countries. To determine to what degree the effect of the independent variables differs between boys and girls and between urban and rural areas, interactions between all independent variables and gender and urbanization were tested and

included into the model if found significant.

NOTES

[1] Missing values were code as '99' and not included in the analyses.

Chapter 3

Description of The MODEL and first Test on The determinants of COMMERCIAL CHILD LABOR IN 18 COUNTRIES[1]

3.1 INTRODUCTION

A worldwide consensus exists that child labor should be eradicated and that it is in the interest of both the children and the country as a whole that all children go to school (UNICEF, 2008; Sen, 1999; Barro, 1999; Case 2001; World Bank, 2002). Hence, during the last decades, governments and donor organizations have done major efforts to reduce child labor throughout the developing world. In spite of these efforts, still over 200 million children are estimated to be working as child laborers worldwide (ILO–IPEC, 2010b). To improve this situation, it is of fundamental importance to gain a better understanding of the factors that influence the decisions of parents (or other caretakers) regarding the engagement in paid employment of their children. Likewise, policies directed at reducing child labor can only be effective if they are based on a thorough understanding of the forces by which young children are pushed or pulled into the labor market.

Most child labor research focuses on predictors at one level, either the family level (e.g. Buchmann, 2000; Patrinos & Psacharopoulos, 1997) or the national level (e.g. Kis-Katos & Schulze, 2006; Fan, 2004; Levy, 1985). However, in reality, the determinants of child labor are not restricted to one level alone. The parental decisions regarding child labor depend not only on features of children and the family, but just as well on characteristics of the local labor market and of the available educational facilities (Buchmann & Hannum, 2001). Hence, to obtain an encompassing understanding of the roots of child labor, the relevant factors at the different levels (household, district and national) should be studied simultaneously. Recently, researchers of child labor and school enrollment acknowledge the necessity of such a multilevel approach (Manacorda & Rosati, 2007; Bashieri & Falkingham, 2006; Kis-Katos & Schulze, 2006; Smits, 2007; Huisman & Smits, 2009a). The analysis in this chapter fulfills this necessity by simultaneously analyzing the effects of (family) background characteristics and characteristics of the context in which the family lives on the engagement in child labor.

Based on theoretical ideas from various disciplines, an encompassing theoretical framework for child labor decisions – including explanatory factors at the household, district and national level – is developed that was inspired by models for understanding women's employment (Spierings, Smits & Verloo, 2010). This framework distinguishes three conditions which manifest themselves differently at different levels of analysis: resources, structure and culture. Besides direct influences, the framework allows for interactions across levels and for studying the determinants in their specific contexts. The hypotheses derived from this framework are tested by means of a unique database, containing information of 239,120 children aged 8–13 and their families, living in eighteen developing countries from different regions of the developing world. For every child, there is information about the engagement in paid labor and the socio-economic and demographic characteristics of their family. The household-level information is combined with information about the sub-national region (henceforth called 'district') and the country in which the children live. As 221 districts can be distinguished in the

eighteen countries, there is ample explanatory power at the district level for testing hypotheses on context effects. The context information includes indicators of level of development, degree of urbanization, the position of women and the quality of the available educational facilities.

The data are analyzed with multilevel logistic regression models enabling to estimate effects of factors at household and the context level simultaneously. To address within this framework the fact that each situation is unique – and hence that the effects of the various factors could differ depending on the circumstances –, besides direct effects, also cross-level interaction effects between household-level and context factors are studied. The knowledge obtained from this analysis could therefore be helpful in developing tailor-made policy interventions aimed at reducing child labor.

3.2 A COMPREHENSIVE FRAMEWORK

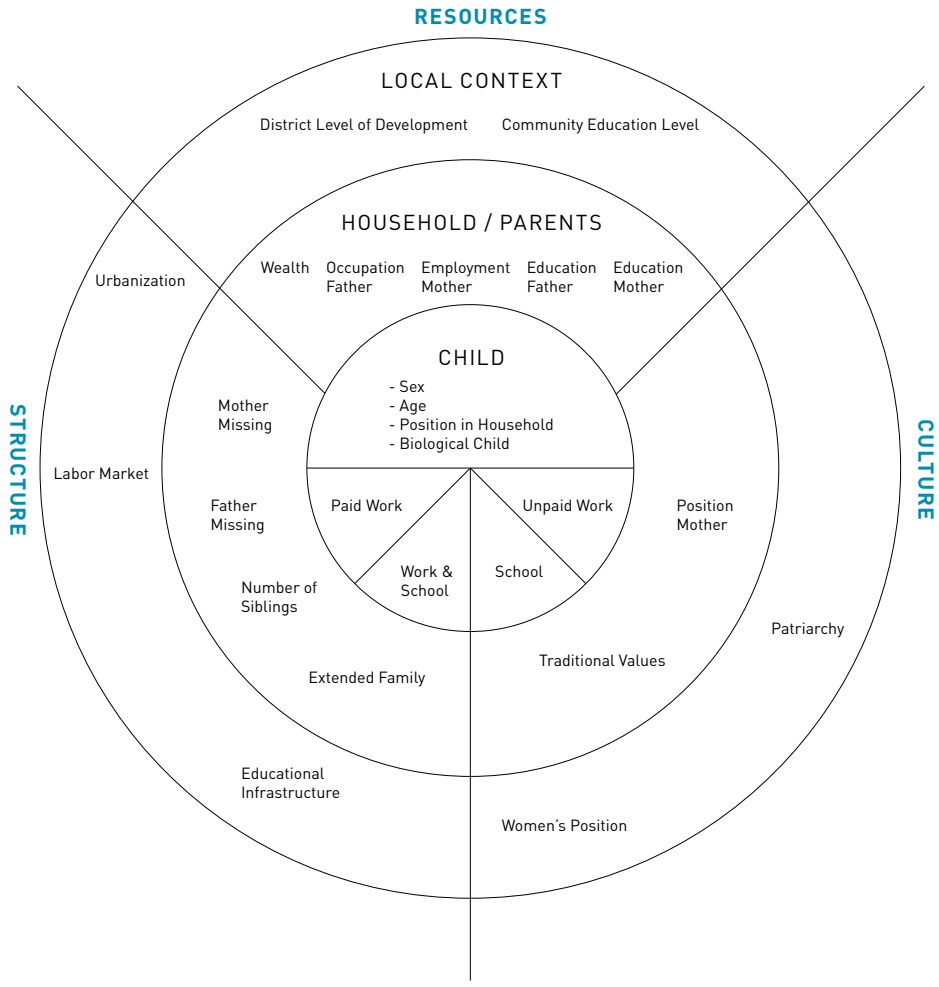
As discussed in the introduction of this chapter, an encompassing understanding of the roots of child labor can only be obtained if the relevant factors at different levels are studied simultaneously. To guide such an analysis, models for the study of women's employment (Spierings, Smits & Verloo, 2010; Hijab, 2001) were adapted into a new theoretical framework for the study of child labor. The framework is based on four pillars: (1) The context in which children live has different levels (household, local, national, international). (2) Decisions regarding child labor are made at the household level, by parents, caretakers and / or other family members. (3) Different factors at the different levels influence these decisions simultaneously. (4) The strength of these influences may differ between contexts.

The model is presented in Figure 3.1. The child is placed in the center. It is embedded in a multilayered context (household, local, national, international). We can think of these layers as concentric circles, with the relevant factors at the inner or lower levels embedded within – and affected by – the outer or higher levels, thus allowing for context-specific effects (Spierings, Smits & Verloo, 2010). The major decision makers regarding children's work are found at the household level. Generally, they are the parents or caretakers of the child, but other family members may also have a voice. The decision has four possible outcomes (as shown in the center of the model): the child can be in school, it can be engaged in paid work, it can be both in school and engaged in paid work and it can be neither in school nor engaged in paid work. In the literature, the last situation is sometimes called 'idle' (Maitra, Panda & Sarangi, 2006; Biggeri et al., 2003; Bacolod & Ranjan, 2008), although the child generally is not really idle but engaged in housework, work at the family business (Webbink, Smits & de Jong, 2012) or unpaid work outside the household. That is why this fourth category is referred to as 'unpaid work'. In this chapter, I reserve the term child labor for children engaged in paid employment (with payment being either in cash or in kind).

To comprehend how the multitude of risk factors shapes the outcome of the decision, they are grouped into three conditions according to the underlying causal mecha-

nisms: resources, structure and culture. These conditions are associated with different strands of literature regarding child labor in developing countries: (1) the (economic) literature focusing on resources, (2) studies stressing the importance of structural factors and (3) (anthropological) work using cultural factors to explain child labor. Economists, such as Basu and Van (1998), state that child labor is an economic decision made by parents in order to survive (Grootaert & Kanbur, 1995a; Ranjan, 1999). Other authors stress the importance of family structure factors (such as the number of siblings) (Edmonds, 2006) or the labor market structure (Emerson & Souza 2008; Duryea & Arends-Kuenning, 2003); hence these are considered to be structural variables. The third group of variables is derived from the literature on cultural explanations (Lieten, 2003; López-

Figure 3.1 Child Labor: a comprehensive multilevel model applied to the empirical study of 18 developing countries



Calva, 2002; Nieuwenhuys, 1994; Delap, 2001). The many factors related to child labor in Figure 3.1 can be understood in terms of how they shape or reflect certain resources, structural characteristics and cultural factors. As explained before, there is assumed that it is likely that these factors influence the child labor decision simultaneously. In the next section, the conditions will be discussed in more detail.

RESOURCES

The most important resources at the household level are income/wealth, parental education and occupation. The poverty hypothesis, or luxury axiom (Basu & Van, 1998), assumes that when a household earns enough, there is no need to generate income from child labor. Parental education is also an important socio-economic resource. Parents who have reached a certain educational level can be expected to want their children to reach at least the same level (Breen & Goldthorpe, 1997) and spend more time on school. Empirical research shows that school enrollment is, to a large extent, influenced by the education of the mother (Huisman & Smits, 2009a) and that it is more important than the education of the father in child labor decisions in rural India (Kurosaki et al., 2006).

In developing countries, many children grow up to do a job similar to their parents; hence a strong relationship between parents' and children's occupations is expected. For some professions, like agricultural work and basic industries, this means that parents might believe that training by doing has more value than formal education (Bass 2004; Smits & Gündüz-Hoşgör, 2006; Lieten, 2003; Beegle, Dehejia & Gatti, 2004). Boys with fathers working in lower non-farm occupations are expected to work more, as they may end up in jobs with low education requirements, such as running a family farm or manual labor. As daughters are often expected to marry into the family of their husband (Bass, 2004), they will be more likely trained in doing the household chores in order to be a good housewife. In this case, parents may find investing in educating their daughters not worthwhile as there are no direct returns for the family (Gündüz-Hoşgör & Smits, 2008; Huisman & Smits, 2009a). Since working mothers will bring more income into the household, mother's work outside the home may be considered a resource. On the other hand, there is also evidence that children with gainfully employed mothers work more (Francavilla & Gianelli, 2007; Bhalotra, 2003), among others because children go along with their mother when she works.

Economic development at the district level is placed under context-level resources. In general, there is more impact of globalization in more modern areas. This includes the diffusion of value patterns stressing the importance of education and gender equality. Moreover, in urban areas, the infrastructure is better, the state influence is stronger and there may be more pressure on parents to send their children to school. Nevertheless, the effect of development on the demand for child labor is not clear-cut. For instance, when agricultural machines replace unskilled agricultural workers, the demand for child labor will drop. On the other hand, mechanization can also increase

the demand for child labor in factories, as happened during the Industrial Revolution (Nardinelli, 1980).

Another important context resource factor is the educational level of the community. When surrounded by educated adults, parents are expected to realize that education is a prerequisite to acquire human capital (Becker, 1993) and better opportunities at the labor market. Therefore, lower levels of child labor in areas with a higher educational level are expected. Besides that, a higher community educational level is also an indicator for a better educational infrastructure, which could also be seen as a structural characteristic. I will discuss this more extensively in the following section.

STRUCTURE

Structural characteristics at the household level often are resource-dilution variables. Individuals with more siblings might be more engaged in child labor because resources have to be shared with other family members. On the other hand, more siblings might also mean more helping hands. This may lead to more time for school for each child (Patrinos & Psacharopoulos, 1997) or, as resources tend to be unequally distributed within households (Buchmann, 2000), to child labor for some and schooling for others. Other structural characteristics of the household are expected to lead to a better access to resources. For instance, in extended families there is more manpower to generate income or to do housework than in nuclear families. On the other hand, when the father or mother is missing from the household, children can be expected to work more.

Birth order might be important too. There are indications that firstborn children have fewer opportunities than their younger siblings (Chesnokova & Vaithianathan, 2008; Edmonds, 2006). Under difficult circumstances, the older children may have to work for pay or help at home in order to create the opportunity to go to school for their younger siblings (Edmonds, 2008). Because the sibling composition might also matter – girls are more often involved in housework (Webbink, Smits & de Jong, 2012) –, it is important to make a distinction between the presence of brothers and sisters. Children with more brothers are expected to be less engaged in commercial work, because there are literally more candidates to do the job (Edmonds, 2006).

Because developing countries lack old age social security programs, parents might prefer their own kin to receive a better education, because they expect that their children will take care of them when they are old (Bhalotra & Heady, 2000). Moreover, as paid child labor often is a last resort to make ends meet (Nkamleu & Kielland, 2006), foster children are expected to be more often engaged in this kind of work.

In the model, structural factors at the context level may create both chances and restrictions. Since there are many differences between urban and rural areas, urbanization might be an important structural factor. Generally speaking, agriculture accounts for 60–70 percent of child labor worldwide (ILO–IPEC, 2006b, p. 8.; ILO–IPEC, 2010a) and this mostly takes place in rural areas. Because child labor generally is unskilled manual work, I expect that children will work more in areas with a higher demand for

unskilled manual work. Opportunities for paid employment in rural areas will primarily be located on larger farms (e.g. tobacco or cacao) or in the mining industry (e.g. in African countries such as Benin, Sierra Leone, and Liberia; and Nicaragua and Peru in Latin America). Nevertheless, children are also engaged in child labor in urban areas. According to ILO–IPEC (2010b), child labor in urban areas is mostly an informal sector phenomenon, but a relatively low share takes place in factories or sweatshops. Because of this ambiguous relationship I cannot formulate a clear-cut hypothesis on the relationship between child labor and urbanization. However, considerable differences are expected for the other effects between rural and urban areas; they will be discussed the section on rural and urban differences.

As mentioned in the previous section, the availability of educational facilities could also be regarded as a structural characteristic. When there are no (good) schools in the vicinity, children are forced to work or to remain idle (Kondylis & Manacorda, 2006). Applied to this analysis, it means that a lower involvement in commercial child labor is expected in in areas with good educational infrastructures.

CULTURE

Norms and values regarding child labor are expected to influence parent's attitudes towards child labor. Different cultures have different values and views about childhood, the labor market participation of children and the role of women in the public sphere. In this thesis, I will mainly focus on women's empowerment, patriarchy and traditionality.

In general, women's empowerment is believed to improve the wellbeing, health (Mukherjee & Das 2008; Hobcraft, 1993) and schooling of their children (Huisman & Smits, 2009a). More empowered women are more capable of using their influence to the benefit of their children (Das & Mukherjee, 2007). This may affect the child labor engagement of both their daughters and sons. In empirical analyses, women's empowerment can be measured on the household level and at the context level. A mother can use her influence to get her children in school because she was inspired by other women in her surroundings, for example.

A factor that possibly influences child labor participation of girls is patriarchy. Parents with more patriarchal values probably invest more in the education of sons (Kambhampati & Rajan, 2008), since their daughters will marry outside of the family. They might keep their daughters out of school to help with housework, but they will probably not let them work for pay outside the home (Kambhampati & Rajan, 2008; Dyson & Moore, 1983). I will test for patriarchal values at both the household and the context level.

The second cultural factor that influences child labor by girls is the position of women. Women (and girls) work less in areas with a taboo on women working in the public sphere (Spierings, Smits & Verloo, 2010). However, this does not necessarily mean that girls are in a better position, because a taboo on working in the public sphere might go hand in hand with lower school enrollment figures (Sundaram & Vanneman, 2008).

RURAL- URBAN DIFFERENCES

The framework's fourth pillar is the idea that effects of determinants of child labor may be different under different circumstances. In this respect I will focus on the role of differences in level of development, as indicated by the variation between urban and rural areas. In more developed/urban areas, the educational infrastructure is generally better, allowing children to go to school more frequently, even when they are (relatively) poor. On the other hand, it seems likely that under more difficult circumstances as experienced in rural areas of many developing countries, parents with more resources will have more possibilities to prevent child labor than parents with fewer resources. Based on this idea, several hypotheses on the interactions of resource, structural and cultural factors and urbanization are posed. Since there is not much theory on the nature of interactions like these, this work is explorative in character.

The influence of the resource variable wealth might be nonlinear. According to the luxury axiom (Basu & Van, 1998), child labor primarily occurs when families live below a given subsistence level. Indeed, recent research indicates that the effect of income might not be linear. Up to a certain threshold, poverty seems to be the driving force behind child labor, but as households obtain more resources, other factors become important (e.g. parental education) (Self & Grabowski, 2009). This could partly explain why some poor children are engaged in child labor and others are not. There is broad evidence that parents with more resources or motivation are better able to get their children into school (Filmer & Pritchett, 1999; Handa, 2002; Mugisha, 2006; Huisman & Smits, 2009a). If poor parents cannot afford schooling, this does however not simply imply that poor children work for pay. It could be that these children have to do housework or help at the farm or family business (Webbink, Smits & de Jong, 2012). Parents will opt more often for 'idleness' in areas with no demand for child labor, effectively enforced child labor laws or a strong public opinion against child labor. I therefore expect that the effect of poverty is smaller in contexts with a lower demand for child labor, or where child labor is prohibited by moral values or law. As laws on school enrollment and child labor are probably less strictly enforced in areas with a poorer infrastructure such as in rural areas, wealth at the household level is expected to matter more in rural areas. Similarly, I hypothesize that the district level of development has a significantly weaker or no effect in rural areas on the involvement in commercial child labor.

With respect to the resource variable parental education, higher educated parents are expected to find ways to educate their children even if they live under harder circumstances in rural areas. Moreover, as discussed in the previous section, empowered women are expected to be more capable to educate their children and protect them from child labor. In urban areas, I expect to see a higher female educational level and hence a higher level of empowerment. Surrounded by other women sharing the same norms and values, mothers will be more able to get their children into school. Therefore, a reinforced effect of empowerment is expected in urban areas.

3.3 FIRST EMPIRICAL TEST OF THE FRAMEWORK

To find out how the framework works in practice, a first empirical test of the framework is conducted for the determinants of commercial child labor for children living in Latin America, Africa and India using the DHS-data. In 3.3.1 the data and methods used for this test are discussed. In Section 3.3.3, the results of the descriptive and multivariate analyses are presented. The robustness tests are described in 3.3.4. In 3.4, I discuss the findings and conclude.

3.3.2 DATA AND METHODS

The data are derived from the Demographic and Health Surveys (DHS). These are large representative household surveys held since the 1980s in many developing countries. I use recent surveys for eighteen countries; Benin 2006, Bangladesh 2004, Chad 2004, Congo DR 2007, Congo-Brazzaville 2005, Egypt 2005, Liberia 2007, Morocco 2003, Mali 2001, Malawi 2004, Senegal 2005, Sierra Leone 2008, Uganda 2001, Colombia 2000, Dominican Republic 2007, Nicaragua 2001, Peru 2004–2008 and India 2006. These countries are chosen because the DHS data for them include information on the labor market participation of young children. Within these countries 221 districts are distinguished. The total number of children aged 8–13 available for my analyses is 239,120 of which 121,943 boys and 117,177 girls.

Besides household-level data, I use context information at the district level. The district-level information is derived by aggregating from the household surveys. Because the samples are large, district-level indicators could be created by taking the district's average of characteristics of households and individuals (compare Huisman & Smits, 2009a).

METHODS

The effect of family background and district characteristics on the participation in child labor is studied using multilevel logistic regression analysis (Hox, 2002; Snijders & Bosker, 1999). I apply three-level multilevel models because I use data on families nested within districts nested within countries and explanatory variables at the household level and district level are included. In all analyses robust standard errors (sandwich estimators) are used. The dependent variable is a dummy variable indicating whether (1) or not (0) the child performed any economic activity for non-household members in the week before the survey. The analyses are restricted to children aged 8–13. The upper limit was chosen because the ILO–conventions on child labor permit light work for 14 and 15 year-olds in developing countries. To determine to what degree the effect of the independent variables differs between boys and girls and between urban and rural areas, interactions between all independent variables and gender and urbanization were tested and included into the model if found significant. To compute these interaction terms, centered versions of the involved variables were used. The main effects, therefore, can be interpreted as average effects. (Jaccard & Turrisi, 2003).

Given the large number of possible interactions, only significant interactions were included in the output tables.

VARIABLES

Independent variables at the household level are socio-economic characteristics (parental education and occupation, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Since income is lacking in most of the surveys, household wealth is used as an alternative. Household wealth is measured by an index constructed on the basis of household assets, such as TVs, cars, telephones, and housing characteristics (such as floor material, roofing, toilet facilities). Using a method developed by Filmer and Pritchett (1998), all households within a country are ranked from low to high on the basis of their assets and subsequently divided this variable into wealth deciles.

Father's occupation is measured with three categories: (1) farm, (2) lower nonfarm (sales, service and manual occupations), (3) upper nonfarm (professional, managerial, technical and clerical occupations). Employment of the mother is a dummy indicating whether (1) or not (0) the mother is employed. Education of the father and mother are measured in years. Children with a missing parent were given the mean score of the other children in the database on the variables indicating characteristics of the parents. Because there are dummies indicating whether or not the mother or father is missing in the model, this procedure leads to unbiased estimates of these variables (Allison, 2001, note 4).

Age of the child is measured in years. Number of sisters and brothers and birth order are measured by interval variables. Presence of the parents is measured with two dummy variables indicating whether (1) or not (0) the mother or father is missing from the household. Extended family structure is measured with three categories (0) nuclear family, (1) more than two adults in the household but no grandparents, (2) more than two adults in the household including grandparents. To indicate traditional value patterns at the household level a dummy indicating whether the mother had her first child under the age of eighteen (1) and the age difference between spouses (interval variable) are included. A dummy indicates whether (1) or not (0) the household lives in a rural area.

District level of development is measured by the TV-index, which reflects the percentage of households with a TV in each district. To indicate the level of the local schooling facilities, the mean number of years of education for men above the age of 13 is included. The proportion of men in lower nonfarm labor is included as a measure for the demand for child labor. As a measure of traditionalism of the district the average difference in age between husbands and wives (age husband minus age wife) is used. In more traditional societies, the age difference between husbands and wives tends to be larger than in more modern societies, so the higher the mean age difference, the more traditional a district is expected to be. Patriarchy is indicated by the percentage of married couples living in households with grandparents from father's side, reflect-

ing the tendency of parents to let their daughters marry into the family of their future husbands.

3.3.3 RESULTS

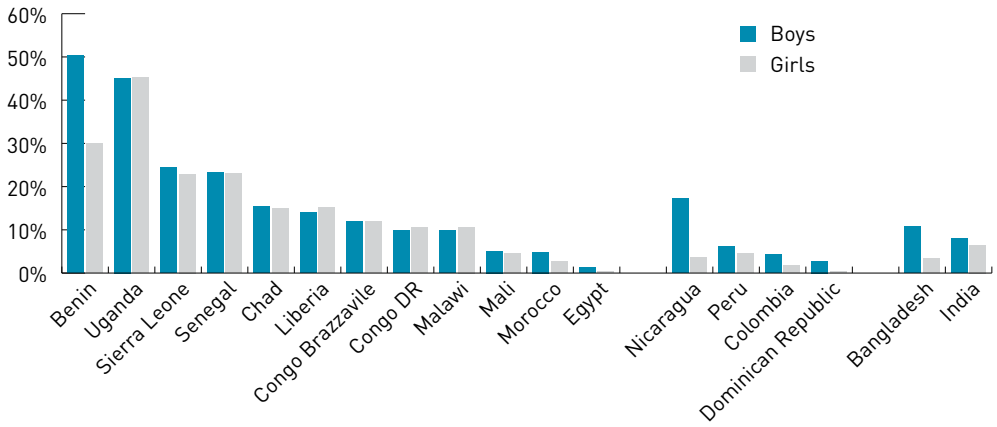
DESCRIPTIVE ANALYSES

Figure 3.2 presents percentages of boys and girls engaged in child labor. Firstly, these figures show that African children are more engaged in child labor than Latin American and Asian children. Only in Nicaragua, the percentage of boys engaged in child labor is with 17 percent comparable to that of some African countries. In Benin and Uganda the percentage (30 to 50 percent) of children engaged in paid work is highest. Children in Egypt, Colombia and Dominican Republic are least involved, with between 0.3 and 5 percent of the children reported to work for pay. In Africa, there are striking differences between the countries, with percentages ranging from 0.3 (Egypt) to 50 (Benin). In South Asia (India and Bangladesh) the incidence of child labor is with 4 to 10 percent relatively low compared to the other regions, but it still implies that millions of Asian children work for pay.

A second striking finding is the difference in the involvement of boys and girls. In some countries boys work much more than girls. The absolute difference between boys and girls is largest in Benin, with 30 percent of girls and 50 percent of boys engaged in paid work. In Bangladesh, the difference between boys and girls is also considerable. An explanation might be found in the fact that both countries have a large Muslim community, in which the labor market engagement of women is comparatively low (Spierings, Smits & Verloo, 2010). For Latin America, the gender difference is largest in Nicaragua, with four times more boys than girls working. Exceptions to the observed gender difference are Malawi and Liberia, where girls are slightly more engaged in child labor than boys.

Figure 3.3 shows the difference in child labor engagement between urban and rural

Figure 3.2 Percentages of boys and girls aged 8–13 engaged in child labor by country



areas. In most countries the incidence of child labor is substantially higher in rural areas. Children in these countries probably are engaged in labor intensive agriculture (tobacco, tea, groundnuts, cacao etc.) and in mining (diamonds, coals etc.) (ILO–IPEC, 2006a; Hindman, 2009). Exceptions are Bangladesh, Mali and India, where children in urban areas work more. In these countries the demand for commercial child labor is more located in work in factories or sweatshops in the carpet- and cigarette industry (Global March, 2011).

There is much variation in the relationship between wealth and child labor among the countries in my sample (Figure 3.4). In Latin America, the largest differences (about 10 percent) between the poorest and upper wealth quartiles are found in Peru and Nicaragua. On the whole, the results for Latin America suggest a negative linear relationship between wealth and child labor. This is not the case in Africa, where a very substantial percentage of the children from the upper wealth quartile are economically active. In

Figure 3.3 Percentages of children aged 8–13 engaged in child labor by urbanization and country

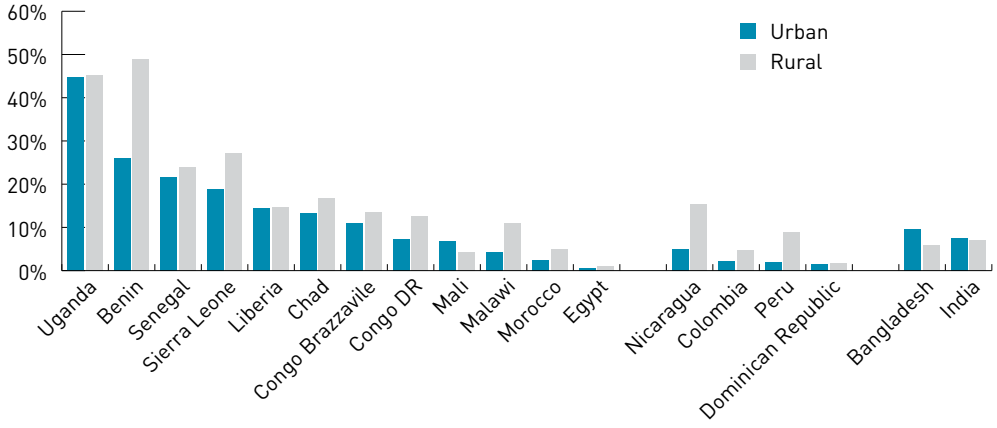
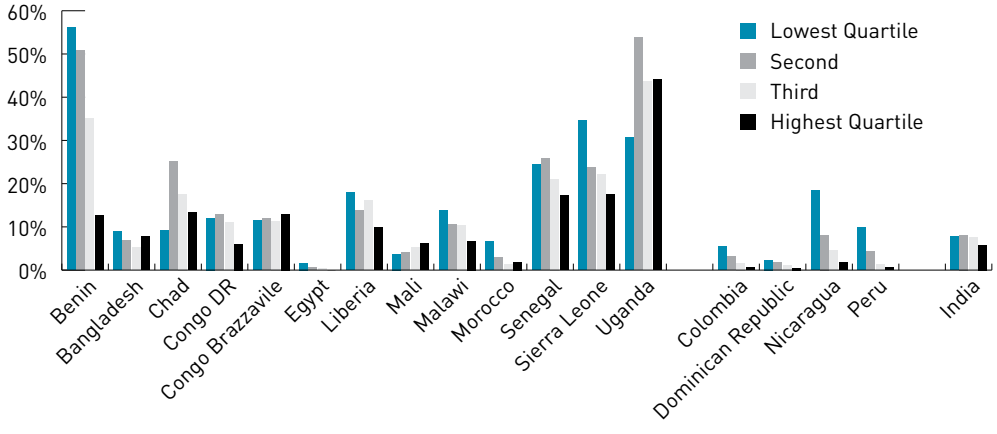


Figure 3.4 Percentages of children aged 8–13 engaged in child labor by wealth status



Mali, there is even a completely reversed pattern with (somewhat) more child labor in the upper wealth quartile than the lowest. It should however be taken into account that the wealth index is a relative index, hence the highest 20 percent of a poor country may on average be still relatively poor.

In Chad, Congo Brazzaville and Uganda children in the middle wealth group are most engaged in commercial child labor. These findings seem to indicate that in these very poor African countries, the money brought in by working children is badly needed to pull households out of extreme poverty and help them to build up at least some wealth. In India, there are only small differences between the upper and the lower quartiles. Hence, wealth does not seem to play a role of importance there.

MULTIVARIATE ANALYSES

Table 3.1 presents coefficients of the multivariate model. For factors that interact significantly with sex and/or living in an urban/rural area, separate coefficients are presented for boys and girls, urban and rural areas, or both. Coefficients that do not differ according to sex or urbanization are presented in column 1 (All), coefficients that differ according to sex in columns 2 and 3, those that differ according to urbanization in columns 4 and 5, and those that differ both according to sex and urbanization in columns 6 to 9. In three cases (occupation father non-farm, mother employed and proportion men in unskilled manual jobs) also the three-way interaction with sex and urbanization was significant.

The variance components (not shown here) of the analyses show that 60 percent of the variation in child labor is due to factors at the household level and 40 percent to factors at the context level. Resources at the household level influence the working status of children in several ways. As expected, children of fathers with more education work less. In rural areas, the education of the mother does not influence children's work, but in urban areas, children with more educated mothers work less. Having a working mother is strongly related to the involvement in child labor. Mother's employment increases the likelihood of children's work, supporting the earlier findings (e.g. Francavillia & Gianelli, 2007) that children with working mothers tend to work more. As this effect is controlled for household wealth, financial reasons cannot be primarily responsible for this effect. Maybe these children work more because they go along with their mothers into the fields or factories. It is also possible that employment of the mother is a sign of demand for cheap female labor at the local labor market. Note that this effect is weaker for rural boys, suggesting that there is a greater division between women's and men's work in rural areas. Children with fathers in upper nonfarm occupations are also less engaged in child labor. Rural girls are exceptions; they work significantly more if their father works in an upper nonfarm job. I do not have a straightforward explanation for this effect. However, note that this is a relative effect in comparison with the reference group of fathers with an agricultural occupation. It could very well mean that girls with a father with an agricultural occupation in rural areas are more engaged in unpaid activities at

Table 3.1 Coefficients of multilevel logistic regression models for children age 8–13 with working

	All	Girls	Boys
	1	2	3
Household factors			
Socio-economic factors			
Education father (years)	-0.018 **		
Education mother (years			
Occupation father			
farm	Ref.		
lower non-farm	-0.115		
upper non-farm[1]			
Mother employed[1]			
Wealth			
Demographic factors			
Sex = girl	0.196		
Age		0.122 **	0.173 **
Father missing		0.119 **	0.016
Mother missing	0.094 **		
Extended family without grandparents	-0.026		
Extended family with grandparents	0.001		
Biological child	-0.064		
Birth order child	-0.081 **		
Birth order quadratic	0.004 *		
Number of sisters	0.034 *		
Number of brothers	0.053 **		
Mother got 1st child under age 18	0.003		
age difference partners	0.001		
Context factors			
Living in rural area	0.100 **		
District level development			
Mean years of male education		0.261	-0.130
Proportion men unskilled manual jobs[1]			
Mean age difference between spouses		-0.121	-0.379 *
Proportion HH with grandparents from father's side			
N	239,120	117,177	121,943

* P<0.05 ** P<0.01

[1] three-way interaction with rural*sex is significant

outside the household as dependent variable

Urban	Rural	Urban Girls	Urban Boys	Rural Girls	Rural boys
4	5	6	7	8	9
-0.030 **	0.015				
		Ref.	Ref.	Ref.	Ref.
		-0.370 **	-0.242 **	0.205 *	-0.289 **
		0.326 **	0.327 **	0.373 **	0.110 *
0.115 **	-0.067 **				
		-0.230	-0.019	-0.397 *	-0.187
		0.042	0.076	0.203 *	0.322 **
0.357 **	0.035				
97, 923	141,197	48,078	49,845	69,099	72,098

their own family farm or for neighbors instead of being engaged in commercial work.

In line with expectations, I find that rural children living in wealthier families work significantly less than children in less well-off families. However, in urban areas children from wealthier households tend to work more. In these urban areas, the labor market structure must offer opportunities for child labor. Note that the wealth effect is a relative effect. Particularly in the poorest countries, being somewhat wealthier does not mean that a household has enough resources to free their children from child labor.

Many effects of the structural demographic variables are the same for boys and girls and rural and urban areas. Only the effect of age and of a missing father differs between boys and girls. Older children work more, yet this effect is stronger for boys than for girls. When the father is missing from the household, girls are more engaged in child labor. When the mother is missing, both boys and girls tend to work more. One would think that when the father is missing, boys have to take over the father's role, but apparently single mothers tend to put economic responsibilities more on the shoulders of their daughters than of their sons. In this analysis, no evidence is found for the idea that parents favor their own children over foster children.

Firstborn children work more than their later born siblings, suggesting that these children make money to pay for their sibling's education. The significant positive quadratic term shows that this effect is nonlinear: for later born children the odds of being engaged in commercial child labor decreases slowly. Children with more brothers and sisters have to work more. This supports the resource-dilution argument that resources are shared with other siblings. Whether the mother had her first child under the age of eighteen does not significantly influence the engagement in child labor of her children, nor does the age difference between partners. This might mean that cultural factors have a smaller influence on child labor than, for example, on educational participation, which is found to be lower for children of teenage mothers (Huisman & Smits, 2009a).

CONTEXT FACTORS

The variance components show that 40 percent of the variation in commercial child labor can be attributed to context level factors. Compared to the figures in the rest of this thesis and what is known from research on educational achievement in Western countries, where Breen and Jonsson conclude that 80–90 percent of the variation is due to socio-economic factors at the household level (Breen & Jonsson, 2005), this is relatively much. With regard to context level resources, we see that children living in rural areas work more. Only rural girls profit from a higher district level of development; they work less in more developed districts. Interestingly, the availability of educational facilities, which is proxied by the mean years of male education in the district, does not have an effect. However, the effect of the labor market structure in rural areas is in line with expectations; the larger the proportion of men in unskilled (manual) labor, the more rural boys and girls are engaged in child labor. Hence, the involvement of adults in unskilled manual labor seems to go hand in hand with a higher demand for child labor.

Both cultural context factors have a significant effect. In areas with a weaker position of females, indicated by a large age difference between spouses, boys are less involved in child labor. So it appears that fathers with a stronger position use this dominant position primarily in favor of their sons and get them out of child labor. In urban areas, children living in patriarchal families work more. It could be possible that adult women are forbidden to work in patriarchal areas and children fill in this labor force gap. Because patriarchal kinship systems may differ between urban and rural areas, this effect might not be present in rural areas. Kandiyoti (1988) for example argues that patriarchal kinships systems differ in the way women are treated. In rural areas in Africa, women are less affected by patriarchal traditional norms and are more involved in work outside the household, as opposed to women living in urban areas. Hence different patriarchal systems may explain this observed difference.

3.3.4 ROBUSTNESS TESTS

Because of the large variation in the involvement in child labor, I performed robustness tests to account for the difference between the countries with an extreme child labor involvement (Uganda and Benin) and a large number of cases (India). For this purpose I have run models without these countries and looked whether the effects remained significant and in the same direction. The results for these robustness tests are summarized in Appendix A at the end of this book. Effects that are significantly different from the original analysis are printed in bold.

In general, when the effects for household resource variables change, they get the expected sign and become significant. For instance, in the analyses without Benin, Uganda or India, children living in rural areas with a mother with more years of education are less engaged in commercial child labor. This demonstrates that the unexpected effect in the original analyses is not robust and perhaps is influenced by outliers in these three countries. Similarly, without Uganda or India in the analyses, the child labor reducing effect of having a father with a lower non-farm occupation becomes significant. This reinforces earlier findings from the original analyses; but also suggests that children in Uganda and India profit less from their father's resources. In the same way, the effect of wealth in urban areas is as expected in each of the robustness analyses; children living in wealthier families work less. This suggests that the demand for child labor in urban areas in Uganda, Benin and India is higher than in the other countries in my study.

The effects of the structural variables seem to be more robust. The effects of gender and being a biological child are the exceptions. The effect of gender is largely influenced by countries with a high child labor engagement. Without Benin or Uganda, girls are significantly more engaged in commercial labor. This does not necessarily mean that they spend more hours on this kind of work, but more on that in Chapter 5. Further, without Benin, Uganda and India in the analyses, biological children are significantly less engaged in child labor. These results suggest that in countries with a high child

labor involvement, such as in Uganda and Benin, every child –both biological and foster children- are expected to contribute to the family income by commercial child labor. In Asia, the child labor problem is less extreme; but parents do not seem to differentiate between biological and foster children either.

Half of the context factors are robust. I found no changes in significance or the direction of living in a rural area, the age difference between partners and patriarchy. The effect of the other context variables sometimes changes. Most important in this respect is the effect of the level of development. Without all three countries, the effect for urban girls also becomes negatively significant, which means that girls work less in higher developed areas, both in the cities and in the countryside (as in the original analyses).

Without India in the model, context effects differ more. For instance, girls are more engaged in a highly educated area; which is rather unexpected. Besides that, a higher demand for unskilled laborers also increases the engagement in child labor by urban girls. Both these effects suggest that girls are more likely to work in countries other than India. Although I am not completely sure what drives all these differences, it suggests that context effects can differ to a large extent between countries and continents. This is one of the reasons I have chosen to make a distinction between two continents: Africa and Asia, in the rest of my thesis.

3.4 CONCLUSIONS

A new multilevel theoretical framework was tested to explain differences in child labor engagement and studied effects of household and context variables on the likelihood of being engaged in child labor for 239,120 children living in 18 developing countries. This framework distinguishes three conditions, namely resources, structure and culture and does justice to the multilevel structure of children nested in districts in countries.

At the household-level, both socio-economic and family structure characteristics were included in the analysis. The context in which the household lived was indicated by its level of development, quality of the available educational facilities, patriarchy, the position of women, and urbanization. Besides direct effects of explanatory factors, also interactions with sex and urbanization were studied. In this way new insights were obtained into the role of the various determinants of child labor under different circumstances.

In line with expectations, I found resources at the household level to make a considerable difference for children's employment. In general, children are less involved in child labor if their parents have a higher educational level, if their father has an upper nonfarm occupation, and if the household is wealthier. In other words: if they have more access to resources. On the other hand, children and especially daughters of working mothers tend to work more. This finding is in line with earlier research (Bhalotra, 2003; Francavillia & Gianelli, 2007). Possible explanations are that girls tend to go along with their working mothers to the workplace or that the demand for cheap (female or children's) labor at the local labor market is reflected by the effect of mother's employment.

Besides resource factors, characteristics of the family structure – reflecting in part an unequal distribution of resources and duties within the family – are associated with child labor. Children work more if they have more siblings and especially if they have more brothers. Hence the higher economic need of families with many children seems to push children into the labor market. Child labor is also higher in families with a missing mother. My expectation that non-biological children would be more involved in child labor was initially not confirmed by the data. However, the finding that there are no differences in the child labor involvement of biological and foster children is largely driven by Uganda, Benin and India. Without these countries in the analyses, I found the expected effect. Cultural factors at the household level do not influence child labor. If the mother had her first child at young age or whether there is a larger age difference between the parents does not significantly influence children's labor engagement. Hence, resources and structural factors seem to matter more than cultural factors at the household level.

Children are less engaged in commercial work in urban areas. No significant effects were found for the other context factors: district level of development, quality of the local educational facilities and the position of women. However, that does not imply that they are not important. The interaction analysis revealed a substantial number of significant interactions between the context factors (including school quality and position of women) with sex and urbanization.

By testing interactions with gender and urbanization, specific information on the importance of the risk factors under different circumstances and on the way their effects differ between boys and girls was obtained. With respect to gender, I found that both boys and girls work more when they grow older, but that this effect is stronger for boys. More importantly, the absence of the father is especially important for girls. While a missing mother increases the chances that both boys and girls work, a missing father only increases the employment probability of girls. Hence, single mothers seem to put economic responsibilities more on the shoulders of their daughters than of their sons. This may seem counterintuitive at first sight, but perhaps these single parent mothers put their trust more in their daughters in commercial affairs after disappointments with their husbands.

A cultural factor which is only significant for boys is the district's average age difference between spouses. If this difference is larger, meaning a more traditional environment, boys are less engaged in child labor. This finding is in line with the idea that in more traditional and patriarchal areas, families tend to invest more in sons. However, in urban areas where more women marry into the families of their husbands, both boys and girls tend to work more.

Children in rural areas profit from living in a wealthier household and are less engaged in child labor. Interestingly, children from wealthier households in urban areas tend to work significantly more. This effect might reflect a demand for child labor in the cities (especially in unskilled labor intensive work) and the possibility that wealthier

parents are better able to find work opportunities for their children. Mother's education is only important in urban areas; in rural areas children cannot profit from their mother's resources.

The central hypothesis regarding these interactions was that under more difficult circumstances parents with more resources would take more effort to prevent their children from child labor and that I would find a stronger child labor reducing effect of socio-economic resources. This idea was largely disproved by the data. In the initial analyses, children from wealthier households work more in urban areas. The influence of the other socio-economic factors did not differ between urban and rural areas. Rural girls are the exception; they seem to miss the boat in profiting from their father's resources. Rural girls work more if their father has an upper nonfarm occupation. On the other hand, they are the only ones who profit from living in a more developed area. For policy makers, this finding is important. It shows that child labor reducing programs might have different and unexpected and unintended effects for different target groups.

To conclude, this new theoretical model offers ample opportunities for comparative child labor research. If necessary, new indicators can be added to the model, and placed under one of the three conditions: resources, structure and culture. Moreover, the multilevel approach allows for studying the role of context factors and for testing whether effects of factors are different under different circumstances. I showed that a substantial number of background characteristics have different effects in either rural or urban areas.

This theoretical model is designed to be applied to other geographical and child labor outcomes. Because the extent to which a child suffers from child labor could be largely determined by the time involvement, I will apply this same theoretical model in most of the following chapters to the analyses on weekly hours spent on child labor. Because I use a different data set with more detailed questions on the time involvement of children, I will focus the analyses in part 2 of this thesis on 16 countries in Africa and Asia.

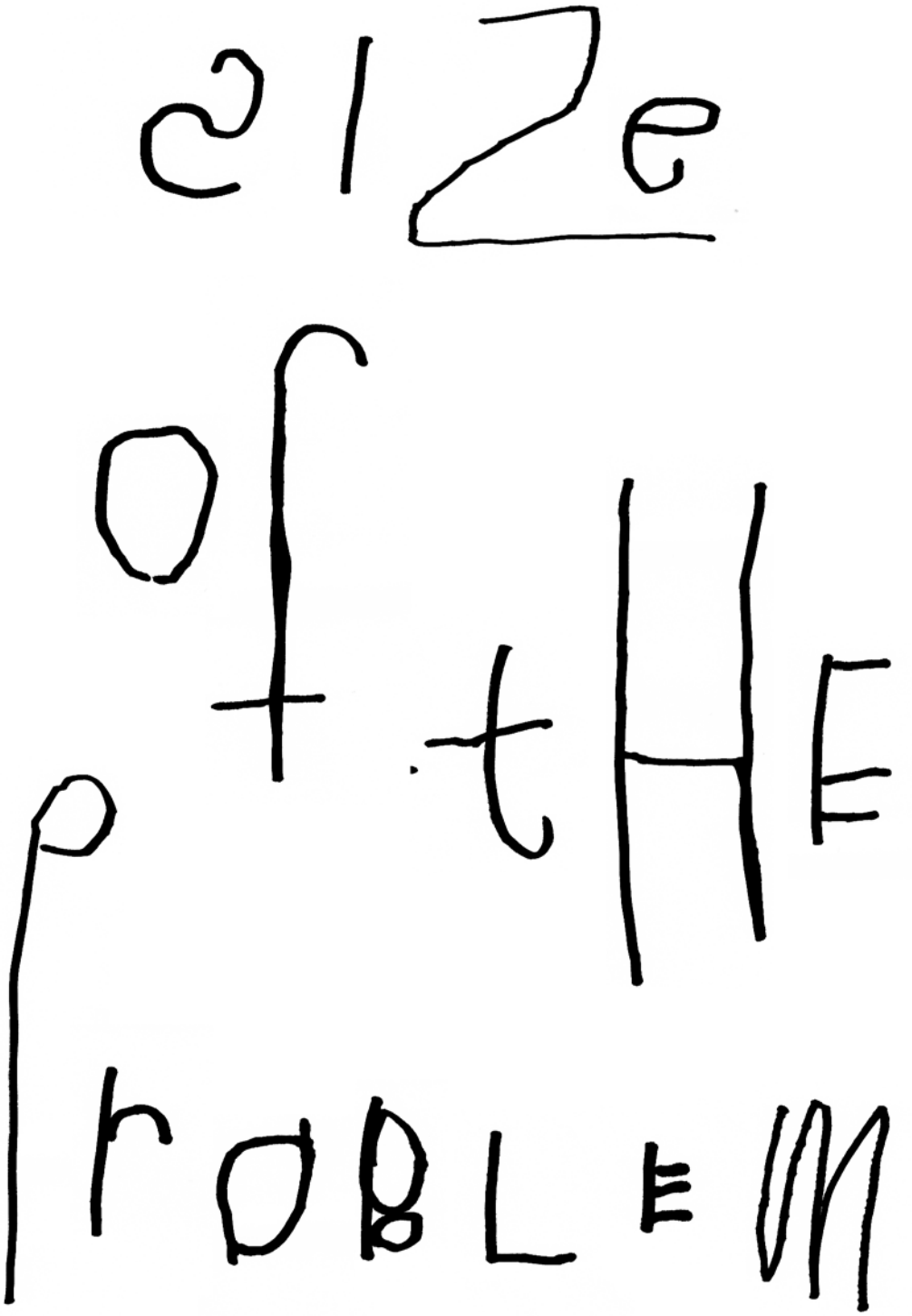
NOTES

[1] This chapter is based on Webbink, E., Smits, J. & de Jong, E. (2013). Household and context determinants of child labor in 221 districts of 18 developing countries. Social Indicators Research, 110 (2): 819–836.

Part 2

Child Labor in Africa and Asia

Chapter 4



4.1 INTRODUCTION

In order to get an answer to my first research question about the size of the child labor problem, I need to have good comparable data. As explained in Chapter 1, two data sources are used in this thesis: the Demographic and Health Surveys (DHS) and UNICEF's Multiple Indicator Cluster Surveys (MICS). Because all the MICS surveys contain the same child labor module with detailed questions on the daily work activities of children, these are better suited for comparative research than the DHS. Besides a thorough description of the different types of activities of their children, the parents also have to give an indication on the weekly time involvement in the different kinds of child labor, which is a second advantage.

The data described in this chapter are all from the MICS 2005–06 wave from which I could use 16 countries in Asia and Africa. The countries are Bangladesh, Burundi, Central African Republic, Côte D'ivoire, Gambia, Ghana, Guinea Bissau, Sierra Leone, Togo, Malawi, Mauritania, Somalia, Syria, Thailand, Vietnam, and Yemen. Because the selection criteria for the dependent variable were different for each of the types of work in this thesis, the response rate of the analyses varied and the number of children ranges

Table 4.1 Percentages and averages hours worked of girls and boys aged 8–13 engaged in paid

	Girls							
					Average hours			
Country	work	1–5	6–15	16+	rural	urban	total	N
Côte D'ivoire	2.5	34.0	28.2	37.9	16.9	16.0	16.6	4,201
Gambia	1.0	37.1	40.0	22.9	12.8	12.2	12.5	3,586
Ghana	5.1	37.2	38.3	24.5	13.5	6.1	12.0	1,870
Guinea Bissau	3.2	33.3	57.0	9.7	10.1	10.4	10.1	2,871
Sierra Leone	4.7	19.0	62.0	19.0	11.0	6.9	10.2	2,591
Togo	3.9	47.5	38.6	13.9	9.6	8.0	9.3	2,590
Mauritania	1.0	20.0	40.0	40.0	22.2	22.6	22.4	4,716
Burundi	2.7	21.1	37.9	41.1	17.5	31.3	18.5	3,594
CAR	4.2	30.1	22.0	48.0	14.5	10.2	13.6	2,954
Malawi	6.3	39.1	42.3	18.6	10.6	9.9	10.6	10,231
Somalia	1.3	2.9	2.9	94.1	42.5	39.5	41.4	2,615
Yemen	1.3	18.5	48.1	33.3	21.0	17.3	20.4	2,155
African Average	3.5	33.6	40.5	25.9	12.8	13.6	12.9	43,974
Syria	0.5	7.5	20.0	72.5	26.2	26.4	26.3	8,433
Thailand	2.3	49.4	35.4	15.2	9.7	8.3	9.0	7,072
Vietnam	1.5	9.4	15.6	75.0	28.9	38.0	29.8	2,206
Bangladesh	1.6	7.1	15.6	77.3	33.6	46.1	40.2	20,995
Asian Average	1.5	19.3	21.6	59.1	25.5	34.5	29.8	38,706
Total Average	2.5	29.7	35.3	35.1	15.2	25.00	17.6	82,680

from 168,000 to 178,000 children. In this thesis, I focus my analyses on children aged 8–13.

4.2 THE ENGAGEMENT IN PAID LABOR

Table 4.1 presents information on the hours children work for pay. On average around 4 percent of African girls and African boys, 2 percent of Asian girls and 3 percent of Asian boys in this sample are engaged in paid labor. In both continents, there are substantial inter-country differences. For African girls, estimates range from 1 percent in Gambia and Mauritania to 6 percent in Malawi; the numbers for African boys vary from less than 1 percent in Somalia to 8 percent in Togo. In Asia, figures range for girls from less than 1 percent in Syria to 2 percent in Thailand and for boys from 1 percent in Vietnam to 5 percent in Bangladesh. In most countries, boys are more involved in paid labor than girls. Exceptions are Ghana, Somalia, Thailand and Vietnam, where boys are slightly less engaged in paid labor than girls.

Although the number of children working for pay does not seem very large, the time involvement is substantial. In the week before the survey, girls engaged in paid labor

child labor by number of hours worked last week

Boys

				Average hours			
work	1–5	6–15	16+	rural	urban	total	N
5.9	22.9	45.1	32.0	14.3	14.9	14.4	4,538
1.2	37.2	34.9	27.9	13.0	9.6	11.6	3,484
4.6	33.0	36.3	30.8	16.1	10.3	15.1	1,957
4.4	38.2	48.5	13.2	9.5	11.2	9.7	3,127
5.5	31.0	49.0	20.0	10.3	5.6	9.5	2,649
7.8	44.5	39.7	15.8	9.9	7.3	9.4	2,684
1.9	17.0	38.6	44.3	23.2	21.2	22.6	4,792
2.7	20.9	38.4	40.7	19.4	8.0	19.0	3,446
5.9	35.0	21.7	43.3	12.6	19.3	13.7	3,079
6.6	34.6	41.2	24.2	12.7	11.3	12.6	10,144
0.8	0.0	25.0	75.0	32.9	30.5	32.5	2,795
3.2	13.9	34.7	51.4	23.5	21.1	23.2	2,237
4.3	32.0	39.6	28.3	13.7	12.8	13.5	44,932
2.0	11.2	33.5	55.3	23.4	25.3	24.6	9,010
2.1	43.4	32.2	24.3	9.9	10.5	10.2	7,419
0.9	4.5	27.3	68.2	25.4	35.0	26.3	2,335
4.6	3.9	14.4	81.7	43.1	47.6	44.6	21,747
3.3	9.4	19.2	71.4	37.8	37.7	37.8	40,511
3.8	22.7	31.2	46.1	29.1	21.8	23.5	85,443

worked on average 18 hours and boys 24 hours, which is a considerable workload for children in this age group. In Asia, on average girls tended to work even as much as 30 hours and boys 38 hours; in Africa girls worked on average 13 hours and boys 14 hours. Hence, in Asia fewer children are engaged in paid labor, but the ones who do work are engaged in paid labor for many more hours than in Africa.

4.3 THE ENGAGEMENT IN HOUSEWORK AND FAMILY BUSINESS WORK

In Chapter 1, I explained that child labor encompasses all work that may possibly hamper a child's education or health. Especially for girls and children living in rural areas, not including unpaid housework and family business work in child labor statistics may lead to an underestimation of the incidence of child labor. Table 4.2 presents for each country the percentages of girls and boys according to number of hours (0; 1–5; 6–15; 16+) they worked in the week before the survey in housework and family business work. Table 4.2 also presents the average number of hours girls and boys in the country were engaged in these forms of work. Because children can be engaged in both kinds of activities, total hours are also presented. In the week before the survey, girls on average

Table 4.2 Percentages and averages of girls and boys aged 8–13 engaged in housework and family

	Housework										**Family business work**				
	Girls					**Boys**					**Girls**				
Country	0	1–5	6–15	16+	Avg.	0	1–5	6–15	16+	Avg.	0	1–5	6–15	16+	Avg.
Côte D'ivoire	22	31	30	17	8	49	27	18	6	4	54	16	16	15	7
Gambia	18	41	30	11	7	38	33	25	5	4	48	34	15	3	3
Ghana	14	35	38	13	8	23	32	35	10	7	54	15	15	16	7
Guinea Bissau	11	33	42	14	9	24	27	36	12	8	53	14	22	12	6
Sierra Leone	13	48	32	8	6	12	49	32	7	6	48	19	19	14	6
Togo	13	29	42	17	10	21	32	36	10	7	61	16	17	7	4
Mauritania	35	26	28	11	7	53	20	18	8	5	83	6	9	3	2
Burundi	8	14	43	36	15	9	15	42	34	14	94	3	3	1	1
CAR	16	29	26	29	12	23	28	26	23	10	49	19	14	19	7
Malawi	7	24	44	24	12	15	27	40	18	9	69	13	13	5	3
Somalia	17	1	25	57	22	36	2	30	32	14	59	1	13	28	12
Yemen	28	11	33	28	12	50	13	23	14	7	85	2	7	7	3
African Average	17	27	34	22	11	29	25	30	15	8	63	13	14	11	5
Syria	54	20	22	4	4	64	18	16	1	2	97	1	2	1	0
Thailand	19	46	33	3	5	28	45	26	2	4	89	6	5	1	1
Vietnam	27	11	48	14	9	45	12	35	8	6	80	3	10	8	3
Bangladesh	17	16	53	14	9	47	18	32	4	4	96	2	2	1	0
Asian Average	29	23	39	9	7	46	23	27	4	4	91	3	5	3	1
Total Average	20	26	36	19	9	34	25	29	12	6	70	11	11	9	3

worked 12 hours in these forms of hidden child labor and boys 10 hours, but these hours were not evenly divided over the children and the countries. Of the girls, 18 percent not at all worked in these forms of labor, whereas 29 percent worked more than 15 hours. For boys these percentages are 27 percent and 24 percent respectively. Hence, girls are somewhat more involved than boys in these forms of child labor and the percentage of girls working many hours is also higher than the corresponding percentage for boys.

When we look at the country differences, we see that countries with relatively low levels of hidden child labor are Syria (on average 4 hours for girls and 3 hours for boys) and Thailand (6 and 5 hours) in Asia, and Gambia (10 and 6 hours) and Mauritania (9 and 8 hours) in Africa. Countries with high levels are Vietnam (12 and 9 hours) in Asia, and Burundi (16 and 15 hours), CAR (19 and 16 hours) and Somalia (34 and 27 hours) in Africa. In Yemen 35 percent of girls and 24 percent of boys worked for more than 15 hours, in Vietnam these percentages were 26 percent and 21 percent, in Burundi 38 percent and 37 percent, in CAR 43 percent and 36 percent and in Somalia even 68 percent and 53 percent.

The number of hours worked in the family business is generally lower than the number of hours worked in the household. Table 4.2 shows that in the week before the

business work by number of hours worked last week

					Total hours										
Boys					**Girls**					**Boys**					
0	1–5	6–15	16+	Avg.	0	1–5	6–15	16+	Avg.	0	1–5	6–15	16+	Avg.	N
50	14	16	20	9	19	20	29	32	15	32	17	24	27	13	9,039
67	20	11	2	2	16	31	33	20	10	33	28	28	11	6	7,639
50	14	18	18	9	12	24	33	31	15	16	22	30	32	15	4,378
50	14	22	13	6	8	25	36	31	14	16	22	33	28	14	6,325
46	20	21	13	6	8	36	29	28	13	7	36	30	27	12	6,781
61	15	17	7	4	9	22	39	30	13	15	25	37	23	11	5,780
77	7	11	5	3	34	21	29	17	9	46	16	22	16	8	9,636
91	3	4	2	1	7	13	42	38	16	9	13	42	37	15	7,128
57	15	12	16	6	10	24	23	43	19	16	23	24	36	16	7,882
63	16	15	6	4	6	21	39	34	15	13	22	37	28	13	23,532
56	1	14	29	13	13	1	18	68	34	25	1	20	53	27	5,550
80	3	8	10	4	25	10	30	35	15	42	11	23	24	11	4,475
62	12	14	12	6	14	21	32	34	16	23	20	29	29	13	98,145
94	2	3	1	1	54	20	22	5	4	62	18	17	3	3	17,527
88	5	6	1	1	18	43	34	6	6	26	41	28	5	5	14,802
79	2	9	10	4	25	9	40	26	12	38	9	32	21	9	4,559
79	6	11	4	3	17	16	53	15	10	37	17	35	11	7	43,485
85	4	7	4	2	29	22	37	13	8	41	21	28	10	6	80,373
68	10	12	10	4	18	21	33	29	12	27	20	29	24	10	178,518

survey, girls were on average for 9 hours engaged in housework and for 3 hours in family business work. For boys these figures were 6 and 4 hours. Hence girls work substantially more in the household, whereas boys work somewhat more in the family business.

Overall, Table 4.2 illustrates that a large number of African and Asian children are for many hours per week involved in housework and family business work and that the size of the problem differs among countries and between the continents. In some countries many more children are involved and have worked many more hours than in other countries.

4.4 THE ENGAGEMENT IN UNPAID WORK

Table 4.3 presents the percentages of girls and boys engaged in unpaid labor for others outside their household. For these children who are engaged in unpaid labor, I also report the hours children spend on this work (with three categories: 1–5; 6–15; 16+ hours) and the average hours according to urbanization.

In the week before the survey, 9 percent of the African and 1 percent of Asian girls worked for others in unpaid labor. The average engagement for boys is 8 percent in Af-

Table 4.3 Percentages and averages hours worked of girls and boys aged 8–13 engaged in unpaid

	Girls							
					Average hours			
Country	work	1–5	6–15	16+	rural	urban	total	N
Côte D'ivoire	3.2	51.5	23.5	25.0	14.8	11.2	13.1	4,164
Gambia	8.2	59.1	34.9	6.0	6.1	7.2	6.3	3,864
Ghana	11.0	55.8	33.5	10.7	9.9	5.3	8.1	1,949
Guinea Bissau	4.7	43.7	47.4	8.9	9.6	7.9	9.3	2,886
Sierra Leone	20.7	63.8	27.5	8.7	6.6	5.0	6.0	3,166
Togo	7.9	63.5	28.9	7.6	7.2	4.6	6.4	2,672
Mauritania	0.9	59.1	27.3	13.6	9.0	5.2	7.2	4,687
Burundi	0.6	40.0	30.0	30.0	16.3	8.5	15.6	3,495
CAR	16.8	65.0	22.6	12.4	7.3	6.3	6.9	3,649
Malawi	15.6	50.2	40.9	9.0	7.4	6.8	7.4	1,1350
Somalia	2.4	12.7	38.1	49.2	22.1	18.5	21.1	2,638
Yemen	1.8	22.5	72.5	5.0	9.6	7.7	9.2	2,164
African Average	9.0	55.1	34.5	10.4	7.8	6.5	7.5	46,684
Syria	0.3	52.0	12.0	36.0	23.1	9.1	17.5	8,419
Thailand	1.8	64.6	25.4	10.0	5.2	7.1	6.1	7,036
Vietnam	0.6	15.4	38.5	46.2	16.6	17.5	16.8	2,184
Bangladesh	1.5	63.3	25.3	11.3	8.4	5.0	7.6	20,590
Asian Average	1.2	61.8	25.0	13.2	8.6	6.4	8.0	38,229
Total Average	5.5	55.8	33.5	10.7	7.9	6.5	7.5	84,913

rica and 2 percent in Asia; which means that girls and boys in both continents are about equally engaged in work without pay. The differences in the engagement in unpaid labor between Africa and Asia are rather high, but these numbers are averages; the inter-country differences are more substantial. In Burundi, for example, less than 1 percent of the children are engaged in unpaid work. On the other extreme are Sierra Leone and the Central African Republic, where between 17 and 23 percent of the children are engaged in unpaid labor. There are fewer extremes in Asia; the highest and the lowest values are more centered on the average. In Syria, a relatively small share of children are engaged in unpaid labor (less than 1 percent for both girls and boys); and in Thailand and Bangladesh children are most engaged in unpaid labor. However, with 2 percent as the highest average engagement, this is, when compared to most African countries, relatively low. As gender differences are concerned, girls and boys in Africa are almost equally engaged in unpaid labor. In some African countries, boys are relatively more engaged in unpaid labor; in other countries, girls work a bit more. The same holds true in Asia. Hence, the involvement of children in unpaid labor does not seem to be gender-specific.

What may be more important than the engagement in unpaid labor itself, is the

child labor by number of hours worked last week

Boys

				Average hours			
work	1–5	6–15	16+	rural	urban	total	N
3.5	47.4	25.0	27.6	13.8	17.9	15.5	4,499
6.0	50.0	41.6	8.4	7.4	5.9	7.0	3,592
12.4	45.2	39.0	15.8	10.3	8.3	9.8	2,082
4.	50.0	41.1	8.9	9.6	6.3	8.6	3,128
23.2	64.9	27.5	7.6	6.3	4.5	5.7	3,282
7.9	63.3	25.6	11.2	8.9	4.5	7.7	2,707
1.0	58.3	16.7	25.0	10.3	18.2	14.3	4,735
0.7	45.8	29.2	25.0	10.2	-	10.2	3,356
17.5	65.7	22.9	11.4	6.8	6.5	6.6	3,756
11.4	50.2	40.5	9.3	7.7	7.5	7.7	10,690
1.5	14.0	39.5	46.5	22.7	19.6	21.8	2,814
1.9	30.2	60.5	9.3	9.5	8.3	9.4	2,207
8.1	55.5	33.2	11.3	8.1	7.2	7.9	46,848
0.6	32.1	33.9	33.9	16.9	13.4	15.6	8,889
1.9	67.1	24.5	8.4	6.0	5.6	5.8	7,411
0.2	60.0	20.0	20.0	13.0	3.0	9.0	2,318
2.0	50.5	19.4	30.1	14.4	24.5	17.5	21,026
1.6	52.8	21.9	25.3	13.1	17.0	14.5	39,644
5.1	55.1	31.6	13.3	8.7	9.1	8.8	86,492

time spent on this kind of work. Helping out for a couple of hours at a neighboring farm may not be damaging to a child, but it is something quite different when children work so many hours that it becomes harmful to their health or education. The majority of children work less than 6 hours in unpaid labor (55 percent in Africa and 62 percent in Asia respectively). On the other hand, in countries with a relatively small percentage of working children, the children who are engaged in this form of unpaid child labor tend to spend many hours on this work. In Yemen for example, almost 75 percent of the working children spend 6 to 15 hours on unpaid labor, and in Somalia the majority of working children does so for more than 15 hours per week. Likewise, in Cote d'Ivoire and Burundi, a quarter (or more) of the children spend more than 15 hours on unpaid labor. In Asia, the situation is similar. In countries where unpaid labor is a rare phenomenon, children who are engaged in unpaid labor work relatively more hours than in countries with a higher engagement in unpaid labor. For example, in Syria, about one third of the working children are engaged in unpaid labor for more than 15 hours. In Vietnam, the situation for working girls is even worse; almost half of the girls who are engaged in unpaid labor spend more than 15 hours per week. Note that boys in Thailand have a relatively smaller workload than girls.

Table 4.3 also presents the average working hours for children who are engaged in unpaid labor. The averages do not differ much between Africa and Asia. Only Asian boys tend to spend more time on unpaid labor than boys living in Africa. These results indicate that, although unpaid labor seems to be uncommon for boys in Asia, their workload is substantially higher than that of the African working boy. In Africa, boys more often help others out just for a couple of hours.

In Asia, although the average engagement of girls and boys is about equal, working girls, on average, spend more time on unpaid labor than boys. In Bangladesh only, the average number of hours of boys exceeds that of girls. In Bangladesh, more than 60 percent of girls engaged in unpaid labor only occasionally help out. Further, in Vietnam, there are large differences between the average hours worked by urban and rural boys. However, taken into account that less than 1 percent of the boys in Vietnam are engaged in unpaid labor and that most Asian children live in rural areas (see Table 2.4), this average is determined by only a small number of cases.

4.5 VARIANCE COMPONENTS

To get an impression of the degree to which the engagement in child labor is affected by factors at the household and context level, I have estimated variance components for empty models[1] using Markov Chain Monte Carlo (MCMC) – estimation for the different forms of child labor. In multilevel analyses, the variance is estimated at each specified level. This corresponds with – in case of a three level model – three variance components. To determine the variance that can be attributed by factors at the different levels, the intraclass correlations rho (ρ), or Variance Partition Coefficients (VPC) (Snijders & Bosker, 1999; Goldstein, 2011) are computed. The intra-class correlation can be

considered as the proportion of the overall variation in hours worked attributable to, for example, districts. The analyses are estimated with MlwiN (Rasbash et al., 2005).

In Table 4.4, I present the percentages that can be attributed to the household and the context² level. To make a clear division between the household and the context in this table, the context level values represent the total variance that cannot be attributed to the household level. Generally speaking, the estimates make clear that most (60–99 percent) of the variation in child labor can be attributed to household factors. However, the differences illustrate that some types of work may be better explained by factors close to home and while others are more influenced by factors further away.

In line with the general finding, household level variables also seem to determine the involvement in commercial work (95 percent in Asia and 90 percent in Africa). In Asia, context factors are slightly more important in urban areas, possibly reflecting a higher demand for commercial child labor. In Africa, commercial work is somewhat more influenced by demand side factors or (infra)structural factors at the context level.

For housework in Asia, around 70 to 80 percent of the variation can be ascribed to factors at the household level. The involvement in housework of rural girls in Asia and Africa is relatively less attributable to factors at the household level compared to other areas, suggesting that context factors, such as patriarchy and traditionality or a lack of school facilities may drive these rural girls into housework.

The patterns for family business work resemble those for housework. In Asia, there is much variation, with variances at the household level ranging from 69 to 92 percent. Moreover, the involvement of girls is, to a large extent, attributed to factors at the context level. In Africa, the context in rural areas seems to determine family business slightly more than in urban areas. This finding possibly illustrates the importance of the educational infrastructure and dominant cultura l patterns in rural areas.

The involvement in unpaid work in Asia is mainly determined by factors at the household level. In Africa, unpaid work is relatively more determined by context level factors. This could indicate that African children mostly perform unpaid work in their direct surroundings.

4.6 CONCLUSION

In this chapter, I have made an overview of the work activities of children in Asia and Africa. In this way, I could get a detailed picture of the child labor problem. That working may be problematic is best described by the number of children engaged in each of the four types of child labor. The average workload in some types of child labor is so high that it is not unlikely that it might negatively affect children's health or educational outcomes. For example, the engagement of children in paid labor may not be very high compared to the other forms, but in some countries, children spend as much as 40 hours on paid labor, which is a relatively high workload. Roughly speaking, these long workweeks occur in countries with a small share of working children, such as in Bang-

ladesh, Vietnam and Somalia. In Asia, children living in urban areas work more hours in commercial child labor compared to working children in rural areas.

In addition, the statistics in this chapter suggest that for a clear understanding of the child labor problem, we should also look at the engagement of children in unpaid labor, such as housework, family business work and unpaid work for others. Work in the household is not necessarily bad for children; it is only natural that a child is expected

Table 4.4 Percentages to be explained at the household and context level

			Household	**Context**
Commercial work	Asia	Total	95	5
		Rural Girls	95	5
		Rural Boys	95	5
		Urban Girls	93	7
		Urban Boys	91	9
	Africa	Total	90	10
		Rural Girls	87	13
		Rural Boys	89	11
		Urban Girls	97	3
		Urban Boys	96	4
Housework	Asia	Total	78	22
		Rural Girls	67	33
		Rural Boys	79	21
		Urban Girls	72	28
		Urban Boys	82	18
	Africa	Total	70	30
		Rural Girls	65	35
		Rural Boys	67	33
		Urban Girls	72	28
		Urban Boys	70	30
			Household	**Context**
Family Business work	Asia	Total	86	14
		Rural Girls	69	31
		Rural Boys	84	16
		Urban Girls	86	14
		Urban Boys	92	8
	Africa	Total	64	36
		Rural Girls	62	38
		Rural Boys	60	40
		Urban Girls	78	22
		Urban Boys	77	23

Table 4.4 Continued

Unpaid Work	Asia	Total	99	1
		Rural Girls	98	2
		Rural Boys	99	1
		Urban Girls	95	5
		Urban Boys	94	6
	Africa	Total	87	13
		Rural Girls	85	14
		Rural Boys	88	12
		Urban Girls	88	12
		Urban Boys	85	15

to help with the household chores. It becomes a problem when children are kept out of school to work in the household or family business. It could also be harmful when children are too tired in school or cannot do their homework. The descriptive analyses in this chapter show that girls spend more time on housework than boys and they are somewhat less engaged in family business work. Adding up the hours, girls spend relatively more time on hidden household labor than boys. In Africa, girls are also relatively more engaged in unpaid labor outside their household. All in all, these data show that neglecting the engagement of girls in unpaid activities may lead to an underestimation of the child labor problem.

To give an indication of whether the engagement in child labor is influenced by factors at the household or context level, variance components of multilevel models without explanatory variables were presented. These models made clear that child labor can for the largest part be attributed to factors close to the home. In Africa, however, the engagement in child labor can be more explained by community factors than in Asia. In the following chapters, I will describe which factors at the household and the context level explain the engagement in all types of child labor.

NOTES

[1] These are models without explanatory variables

[2] The models in this chapter are all four-level models. The context is defined for three levels: household, cluster (village, neighborhood), district and country. The multivariate regression analyses in the rest of thesis are three- level (country, district, household) analyses. Due to data constraints, I could not include background characteristics at the cluster level.

Chapter 5

Paid Labor: Determinants of Hours Worked in Commercial Child Labor[1]

5.1 INTRODUCTION

In Chapter 3, I looked into the factors determining the engagement in commercial work in eighteen countries in Latin America, Africa and India. However, treating child labor as an either-or problem may be problematic (e.g. Patrinos & Psacharopoulos, 1997; Canagarajah & Nielsen, 2001; Emerson & Souza, 2008). The degree to which a child's development and schooling suffer from being employed in paid labor depends to a large extent on the time involvement (Rosati & Rossi, 2003; Dorman, 2008). Children's lives are much less affected if they work only a few hours a week than if they work many hours. The focus of this chapter will therefore be on the number of hours children are engaged in paid work.

Starting point in this chapter is the theoretical framework that includes explanatory factors at the household, district and national level (Webbink, Smits & de Jong, 2013) previously described in Chapter 3. To test the hypotheses derived from this framework, I use a unique database containing information of 168,123 children aged 8–13 living in sixteen low-income countries in Africa and Asia, for which is known whether they work for pay outside the household and for how many hours. I also have information on the socio-economic and demographic characteristics of their family background and of the context in which they are living. This context information is at the district level within the 16 countries. As 214 districts can be distinguished, there is ample explanatory power at the sub-national level for testing hypotheses on socio-economic and cultural context effects.

To find out which factors at which level of aggregation are most important in explaining the number of hours a child is engaged in paid labor, multilevel regression models that allow estimating simultaneously the effects of factors at the household and context level are applied. Each situation is unique, in the sense that the effects of the various relevant factors might differ depending on the circumstances. In a multilevel context, this uniqueness can be addressed by studying interactions between household and context factors (Huisman & Smits, 2009a). In my analyses, this possibility is worked out by studying how the effects of risk factors differ between urban and rural areas.

5.2 THEORETICAL BACKGROUND

To guide my research, I use the theoretical framework developed in Chapter 3. This framework is influenced by models for understanding women's employment (Hijab, 2001; Spierings, Smits & Verloo, 2010) and is presented in Figure 3.1. It is based on four pillars: (1) The context in which children live has different levels (household, local, national, international). (2) Decisions regarding child labor are made at the household level, by parents, caretakers, or other family members. (3) Different factors at the different levels influence these decisions simultaneously. (4) The strength of these influences may differ between contexts.

The focus of my research is on the individual children, who are placed in the center of the figure. Each child is embedded in a multilayered context, represented by the

concentric circles surrounding the child. The first circle represents the nearby context of the household in which the child lives, the second circle the local context in which the household is situated, and the third circle the more distant context of the national and international factors that may influence child labor. The factors at the inner, or lower, levels are supposed to be embedded in – and shaped by – more distant factors. In this way the model addresses the fact that determinants of child labor may be context-specific.

The decisions of parents (or other family members) regarding work or schooling of children are supposed to have four possible outcomes: the child can be in school, it can be engaged in paid work, it can be both in school and engaged in paid work and it can be neither in school nor engaged in paid work. The last situation is sometimes called 'idle' (Bacolod & Ranjan, 2008), although the child often is not really inactive but engaged in work at home, on housework or for the family business (Webbink, Smits & de Jong, 2012).

In the model, the many factors at different levels that may affect child labor decisions are grouped into three conditions according to the underlying causal mechanisms. These conditions, called resources, structure and culture, are discussed in the next sections.

RESOURCES

The role of resources has been studied extensively in the child labor literature; child labor is generally considered to be a strategy used by poor households in order to survive (Nkamleu & Kielland, 2006). The poverty hypothesis assumes that children do not have to be engaged in child labor when a household earns enough. However, other resource-related factors, like parental education and occupational status could also play roles. Children of more highly educated parents are more in school and less often engaged in child labor, because parents generally want their children to reach at least the same educational level as they have reached themselves (Huisman & Smits, 2009a; Webbink, Smits, de Jong, 2012). Further, more educated, hence empowered women are more capable of using their influence to the benefit of their children (Das & Mukherjee, 2007) hence, the educational level of the mother sometimes is found to be more important than that of the father (Kurosaki et al., 2006).

Economic development at the district level is placed under context-level resources. More modern areas are influenced more by globalization, including the diffusion of value patterns that stress the importance of education and gender equality (Huisman & Smits, 2009a). In urban areas, the road and transport infrastructure is generally better, the state influence is stronger and there may be more pressure on parents to send their children to school. District educational level is also an important contextual resource factor. It indicates the level of development of the area, but at the same time is related to the availability of educational facilities and to norms in the region about the importance of sending children to school. As an indicator of the educational infrastruc-

ture, district educational level is also a structural factor; hence I will come back to it in the next section.

STRUCTURE

Both family structure, such as the number of siblings (Edmonds, 2006), and structural context factors, like the educational infrastructure and labor market situation (Emerson & Souza, 2008; Huisman & Smits, 2009a), may affect children's engagement in paid labor. Structural characteristics at the household level often are resource-dilution variables. Individuals with more siblings could be more engaged in child labor, because scarce resources have to be divided among more family members. On the other hand, a higher number of siblings also means more helping hands. This may lead to more time for school for the children (Patrinos & Psacharopoulos, 1997; Nauck, 2007). Children living in extended families might work less, because there are more adults present to generate household income. Correspondingly, in households where one of the parents is missing, children are expected to work more.

Birth order is important as well. In poor households, the older (first-born) children may have to work for pay or help at home and their labor may create the opportunity for their younger siblings to go to school (Edmonds, 2008). In this respect it is important to distinguish between the presence of brothers and sisters. Girls are more often involved in housework and boys more in commercial work (Webbink, Smits & de Jong, 2012; 2013). Hence, children with more brothers might be less engaged in commercial work, because there are more candidates to do the job (Edmonds, 2006). Foster children are expected to be more engaged in paid work than biological children. As biological children often take care of their elderly fathers and mothers, parents might be prepared to invest more in their education than in that of non-biological children (Serra, 2009).

Important structural context factors are the educational infrastructure and the local labor market structure. When there are no (good) schools in the vicinity, they will have to work (at home or at the labor market) or remain idle (Kondylis & Manacorda, 2006). Likewise, without work opportunities, children simply cannot be engaged in paid labor. Differences between urban and rural areas are important too. As we also saw in Chapter 3, it is reported that most child labor is concentrated in rural areas (ILO–IPEC 2010a, p.13.), where children may work on large farms (e.g. tobacco or cacao), or in the mining industry. Child labor in urban areas usually takes place in the informal sector, such as scavenging, vending and selling (ILO–IPEC, 2010b). It is reported that this number is relatively higher than the number of children working in factories or sweatshops. (ILO–IPEC, 2011).

CULTURE

The third group of variables is derived from the literature on cultural explanations (Lieten, 2003). Parents' attitudes towards child labor are expected to be influenced by norms and values dominant in the context where they live. Views on childhood and child

labor are not everywhere the same and are related to the position of women (Kandiyoti, 1988; Nieuwenhuys, 1996). In a classical patriarchal system, a woman is subordinated to her husband and works in his house. She may not be allowed to develop a business or work outside the home (Moghadam, 2004; Gündüz-Hosgör & Smits, 2008). As a consequence, many women in classical patriarchal societies do not accumulate assets and depend on their male family members (their husbands, brothers, and sons) for old-age security. If education is regarded as a way of enhancing a child's future income, parents in such a system can be expected to invest more in the education of their sons than of their daughters. Systems of classical patriarchy are found in North Africa, the Middle East and South and East Asia (Kandiyoti, 1988, p. 278). The dominant patriarchal system in sub-Saharan Africa is different. In sub-Saharan African countries, the insecurities of polygyny lead to greater autonomy for women. Sub-Saharan African women are primarily responsible for their children's sustenance, including the costs of education; men feel less obliged to contribute (Kandiyoti, 1988, p. 277). This might also mean that in these countries women are more inclined to let their children work for pay, if they do not get enough from the fathers to make ends meet.

RURAL-URBAN DIFFERENCES

The theoretical framework's fourth pillar is the idea that effects of risk factors of child labor may differ depending on the circumstances. In this respect, I focus on differences between urban and rural areas in this (and the following) chapter(s). In urban areas of poor countries, facilities are often better, the influence of globalization stronger, and the idea that child labor is objectionable and children should be in school more dominant (Huisman & Smits, 2009a). In these areas, children are expected to work less and to be more in school, even if they are (relatively) poor. In rural regions, schooling may entail higher costs due to more limited availability and accessibility of schools (Hazarika, 2001; Huisman & Smits, 2009a; Mugisha, 2006). Under these circumstances, parents with few resources might have fewer possibilities to get their children into school and choose to have them help at home or work for pay instead. Hence according to the situational dominance hypothesis, the effects of resources depend on the circumstances. A more severe situation is associated with weaker positive effects, because there are fewer possibilities in these areas anyway (compare Spierings, Smits & Verloo, 2010).

5.3 DATA AND METHOD

DATA

Data are used from the third wave (2005–06) of UNICEF Multiple Indicator Cluster Surveys (MICS, www.childinfo.org) for five developing countries in Asia and eleven in Africa. The data are derived from the Database Developing World (www.datdevworld.org), a multilevel data infrastructure in which MICS and other surveys are connected and supplemented with context information at district and national level. The countries are Burundi, Central African Republic, Côte D'ivoire, Gambia, Ghana, Guinea Bissau,

Sierra Leone, Togo, Malawi, Mauritania, Somalia, Bangladesh, Syria, Thailand, Vietnam and Yemen.

Besides household-level data, context information at the district and national level is used. Within the 16 countries, 214 districts can be distinguished for which I included district-level context factors. Since the samples are large, these district-level variables could be created by calculating the district's average of households' and individuals' characteristics (compare Huisman & Smits, 2009a). Given the huge cultural and institutional differences between Asia and Africa, separate analyses for these continents are performed. Since Yemen is geographically very close to Africa and resembles its African neighbors more than its Arab neighbors, Yemen is included in the African subsample.

METHOD

The data are analyzed with multilevel regression models (also called mixed models or hierarchical linear models; see Snijders & Bosker, 1999), with hours spent during the past week (seven days) on paid labor as the dependent variable. Because I use data on families nested within districts nested within countries, three-level models are applied and explanatory variables at household and district level are included.

The analyses focus on children aged 8–13. The questions on paid labor in the MICS surveys are formulated as follows. "During the past week did (name) any kind of work for someone who is not a member of this household?" If this question was answered with yes, it was subsequently asked whether this work was "For pay in cash or kind" and "About how many hours did he/she do this work for someone who is not a member of this household?" The dependent variable has a minimum value of 0 hours and a maximum of 95 hours. Children who worked for a non-household member and were paid in cash or kind are considered to be engaged in paid labor for the number of hours mentioned. All other children are considered to work zero hours in this kind of work.

Independent variables at the household level are socio-economic characteristics (parental education, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Household wealth is measured by an index constructed on the basis of household assets, such as TVs, cars, telephones, and housing characteristics, such as floor material, roofing, and toilet facilities. Education of the father is measured by using three categories. Given the low educational levels of the mothers, their education was measured with a dummy indicating whether or not she completed primary education.

Age of the child is measured in years. Number of sisters and brothers and birth order are interval variables. Presence of the parents is measured with dummy variables indicating whether or not the mother or father is missing from the household. Extended family structure is measured with three categories: nuclear family, more than two adults in the household but no grandparents, more than two adults in the household including grandparents. Urbanization is measured by a dummy indicating whether or not the

household lives in a rural area. For educational infrastructure I use the average number of years of education for people aged over 13 in the district. As a measure of traditionality of the district the average difference in age between husbands and wives (age husband minus age wife) is used. Patriarchy is indicated by the percentage of married couples living in households with grandparents from father's side, indicating the tradition of girls to marry into the family of their husband.

For children with a missing parent, the dummy variable adjustment method (Allison, 2001) was used to address missing values on the parental characteristics. In this procedure, the cases with missing values get the mean of the valid values and a dummy is added to the model to identify the cases for which the mean was substituted. According to Allison (2001, p. 87), this procedure delivers unbiased estimates of the variables if the missing values are due to non-existence of the respective cases, as is the case here with the characteristics of parents who are missing.

By adding quadratic terms to the models, I tested for nonlinearity of the continuous variables. To test whether the effects of the explanatory variables differ between boys and girls interactions between all variables and sex were computed. If the interaction was significant, separate coefficients for boys and girls were estimated. If not, a general coefficient was presented. To address the possibility that effects differ between urban and rural areas, I also tested for interactions with urbanization and added the significant interactions to the model.

5.4 RESULTS

In Chapter 4, I showed that, with averages ranging from less than 1 to 7 percent, children in Asia and Africa are not much engaged in paid child labor. However, the children who are engaged in commercial child labor tend to spend much time on this kind of child labor. Especially Asian children work long hours; on average, they work more than 30 hours. In Africa, working children have more time to perform other activities. This might not mean that they go to school instead; they could also be engaged in the other types of unpaid work described in the subsequent chapters of this thesis.

MULTIVARIATE ANALYSES

The variance components of the multilevel regression models described in Chapter 2 show that in Asia as much as 95 percent of the variance in hours worked in paid labor can be explained by household level factors. In Africa this percentage is with 90 percent somewhat lower, but still substantial. Hence in these countries it is mainly the household situation that determines whether children work for pay. There are hardly any differences in this respect between boys and girls, but substantial differences between urban and rural areas, which, interestingly, are in opposite direction in the two continents. In Africa the proportion of variation explained by household level factors is around 96 percent in urban areas and 88 percent in rural areas, whereas in Asia it is 92 percent in urban areas and 95 percent in rural areas.

Table 5.1 Coefficients of multilevel linear regression models for children age 8–13 with hours

	Asia		
	All	**Girls**	**Boys**
	1	**2**	**3**
Household factors			
Socio-economic factors			
Education father			
none			
at least some primary		-0.238 *	-0.827 **
at least some secondary		-0.373 **	-1.140 **
Education mother at least some primary		-0.401 **	-1.046 **
Wealth		-0.045 **	-0.132 **
Demographic factors			
Sex = boy	1.251 **		
Age		-0.869 **	-0.508 **
Age squared	0.049 **		
Father missing	0.470 **		
Mother missing	0.329 **		
Extended family without grandparents	-0.146 **		
Extended family with grandparents	-0.181 *		
Biological child	0.721		
Birth order child		-0.080	-0.351 **
Number of sisters	0.159 **		
Number of brothers		0.077	0.276 **
Number of young children in household		-0.077	-0.238 **
Economic context factors			
Living in rural area		-0.698 **	-0.952 **
Mean years education adults in district		-0.148	-0.479 **
Cultural context factors			
Mean age difference between spouses in district		0.060	0.387 **
District % HH with grandparents from father's side	0.030		

Table 5.1 Continues on next page

spent on paid child labor as dependent variable

	Africa		
	All	**Girls**	**Boys**
	4	**5**	**6**
	-0.085 *		
	-0.081		
	-0.116 **		
		-0.050 **	-0.077 **
	0.126 **		
		0.092 **	0.144 **
	0.086 **		
	0.084		
	0.017		
	-0.012		
	-0.081		
	-0.027		
	0.014		
	0.019		
	0.025		
	-0.033		
	-0.073		
	-0.197 **		
	0.050		

Table 5.1 Continued

	Asia		
	All	**Girls**	**Boys**
	1	**2**	**3**
Interactions with living in a rural area			
Age		-0.157 **	0.021
Father missing	-0.469 **		
Mother missing [1]	1.449 **		
Education father at least some primary		0.174	0.795 **
Education father at least some secondary	0.356 *		
Education mother at least some primary	0.755 **		
Wealth	--		
Number of sisters	-0.203 **		
Mean age difference between spouses in district		-0.320 **	-0.060
N	79,217	38,706	40,511

* P<0.05 ** P<0.01

Table 5.1 presents the multilevel regression coefficients. For variables that interacted significantly with sex, separate coefficients for boys and girls are presented; otherwise a general coefficient is presented under 'All' (columns 1 and 4). Significant interactions with urbanization are presented in the bottom part of the table.

The first striking finding is that in Asia the coefficients of all variables but one are significant, whereas in Africa this is only the case with one third of the variables. All Asian coefficients are also larger than the corresponding ones for Africa and they differ more between boys and girls and between urban and rural areas. In Asia more than half the coefficients differ according to sex and over one third between urban and rural areas. In Africa only two coefficients (wealth and age) differ according to sex and between urban and rural areas. Hence, in all respects there is much more variation in Asia than in Africa.

A higher education of both parents reduces the time their children spent on paid labor. In Asia this effect is significantly larger for boys than for girls; in Africa girls and boys benefit to the same amount of their parents' education. In Africa, the fathers' secondary education has no significant effect. Household wealth shows the expected effect: children are significantly less engaged in paid work if the household is wealthier. This wealth effect is stronger for boys than for girls in both continents. I tested for nonlinear effects of this variable, but they turned out to be linear.

In Africa, the only significant demographic effects are those for sex, age, and absence of the father. Boys, older children and children with a missing father work significantly more. In Asia, all demographic factors are significant. There, the effect of

	Africa		
	All	**Girls**	**Boys**
	4	**5**	**6**
	0.071 **		
	0.027 *		
	88,906	43,974	44,932

age is nonlinear. Boys and girls older than 9 (indicated by the quadratic effect) are more engaged in paid labor the older they get. However, this increase in workload is higher for boys than for girls. The gender difference in child labor is much more pronounced in Asia than in Africa. This could be related to the African traditional patriarchal system.

If the father or mother (Asia only) is missing from the household, children spend more time on paid labor, probably because they have to compensate for the labor of the missing parent. In Asia living in an extended family reduces the hours children work for pay. Apparently, members of the extended family are willing and able to work in order to reduce the workload of children. The idea that adopted or foster children would be more involved in paid work than biological children is not confirmed by the data.

Later-born Asian children tend to spend fewer hours on paid labor than their older siblings. In Asia, children with more siblings work more hours, but having more brothers only increases work hours of boys. In households with young children, boys tend to work less for pay. On the whole, these findings suggest that if there are boys in a household, they will be the first to be engaged in commercial work. The many significant effects for boys in Asia suggest that the place of girls is much more in the home than in Africa; they only seem to work if there is no other option.

Regarding the context factors, we see that Asian children work less if they live in a rural area. Asian boys also work less if they live in a more highly educated area. Living in a more traditional area, as indicated by a larger age difference between husbands and wives, significantly increases hours worked by Asian boys. In Africa, a larger age differ-

ence between partners is associated with less paid labor of children. This might be due to the lack of opportunities for paid work in more traditional areas. Patriarchy has no significant effect.

INTERACTIONS WITH URBANIZATION

To test the fourth pillar of the model, the idea that determinants of child labor may work different under different circumstances, I analyzed interaction effects with living in a rural area. In Asia, there are much more differences between urban and rural areas than in Africa. Rural children seem to start working at an older age; missing a father is less problematic for them, but missing a mother is associated with more hours work. Parental education is less important in rural areas of Asia. The effect of the number of sisters is almost reduced to zero in rural areas. In more traditional rural areas of Asia, indicated by a larger age difference between partners, children also work less.

In Africa, only the effects of age and wealth differ regarding urbanization. Both factors are more positive in rural areas, which means that the increase in child labor with age is stronger and the influence of wealth weaker there.

The results in this chapter support the situational dominance hypothesis. The interaction effects show that education in Asia and wealth in Africa make less of a difference in rural areas, possibly because there are fewer possibilities to go to school and/or a higher demand for child labor.

5.5 CONCLUSIONS

In this chapter, I aimed at gaining insight into the determinants of the number of hours spent on paid child labor, by analyzing representative data for 168,000 children living in 214 districts of 16 developing countries. The data show that child labor incidence varies between less than 1 percent and 8 percent, with generally higher percentages in Africa than in Asia. These percentages might not be extremely high, but the average time involvement of working children is substantial. This is particularly true in Asia, where girls work on average 30 hours per week and boys work an average of 38 per week. In Africa the average is, with about 13 hours, lower, but still substantial. The lower average in Africa might be due to a lack of paid work in this lower developed continent. If so, child labor may rise in Africa if the continent's level of development increases.

To gain insight into the driving factors behind paid child labor, a multilevel analysis was performed in which effects of socio-economic, demographic and cultural factors at the household and context level were studied simultaneously. Given the huge differences between the Asian and African context, this analysis was performed for each continent separately. The multilevel analyses indeed revealed large differences between Africa and Asia. In Asia, almost all explanatory variables contributed significantly to the involvement in paid labor; in Africa this was the case with only a few variables. Gender differences were also much more pronounced in Asia. The continents are similar in the way household resources, in the form of parental education or

wealth, reduce the number of hours children spent on paid work. However, in Africa hardly any other factors were important, whereas in Asia, besides resources, structural and cultural factors also played roles. It seems that in the least developed (African) countries, lack of resources is the major driving factor behind child labor, whereas at a higher level of development (such as in the Asian countries), other factors become important.

Living in an extended family reduces child labor in Asia, whereas having more siblings increases it. This especially applies to boys. Asian girls are substantially less involved in paid labor. This does not imply that Asian girls are always better off. The Asian girls who are engaged in paid labor tend to work much more hours than their African counterparts. The same is true for Asian boys.

An important contribution of this study is that effects of household and context factors are studied simultaneously for such a large number of countries for the first time. My findings show that it is to a large extent the household situation that determines the number of hours a child is involved in paid labor. The context seems to be especially important in rural areas in Asia. To end child labor, improving the household situation seems to be a first prerequisite. In rural areas, a lack of possibilities might dominate and improving the (educational) infrastructure might be a second step forward there.

NOTES

[1] This chapter is based on Webbink, E., Smits, J. & de Jong, E. (2012). "Child labor in Africa and Asia: Household and context determinants of hours worked in paid labor by young children in 16 low-income countries", which has been submitted to a peer-reviewed international journal

Chapter 6

Hidden Child Labor: Determinants of Hours Worked in Household and Family Business Work of Children[1]

6.1 INTRODUCTION

Child labor has different faces. When we hear the term child labor, we generally think of market work: we visualize poor children working in mines or knitting our carpets. In the previous chapters I studied the involvement in commercial child labor, but as was explained earlier: this is just one of the different faces of child labor and only a minority of working children is engaged in market work (Edmonds, 2008). Many children in developing countries are neither enrolled in school nor engaged in paid employment. Although these so-called "idle" children are not gainfully employed, many of them tend to work in more hidden forms of child labor, like work in the household, at the family farm, or in the family business. This "idleness-problem" and the notion that these children might be involved in these hidden forms of child labor have become more and more recognized (Amin, Quayes, & Rives, 2006; Ray & Lancaster, 2005). Still, comparative research into the factors that influence this kind of child labor is largely lacking.

Work done at home is often not included in employment statistics, leaving us with restricted knowledge about the children performing these tasks. The few available statistics indicate that the percentage of these children varies among countries and regions, that up to a quarter of the school-aged children may belong to this group, and that the majority are girls (Biggeri et al., 2003; Cigno, Rosati & Tzannatos, 2002). Given the scale of this problem, it is important to gain insight into its determinants so that policies aimed at reducing hidden child labor can be developed.

This chapter aims at getting a better understanding of the child labor phenomenon by determining the factors that influence the engagement of children in two hidden forms of child labor: housework (including activities as shopping, collecting firewood, cleaning, fetching water, or caring for children) and family business work (including activities as farm work, work in a family owned shop or workplace, and selling goods from the family's farm or business in the street and at the market). Previous child labor research into these forms of child labor suffered from data restrictions. I use a unique new data source, the 2005–06 wave of the UNICEF Multiple Indicator Cluster Surveys that allows me to present detailed information on the prevalence of these two forms of hidden child labor and their determinants at household and context level for 16 low-income countries in Africa and Asia. The term housework is reserved for activities in the household (chores, housekeeping) that do not contribute economically to the household. Family business work consists of unpaid activities at the family farm, workplace, or shop that do contribute economically to the household.

6.2 THEORETICAL BACKGROUND

Children in developing countries have several options regarding work and education. They can go to school, work for the market, do housework, work in the family business, or do a combination of these activities. Hidden child labor refers to the last two activities: housework and work in the family business.

The children's parents generally decide which activity a child performs. The parental decisions are assumed to be guided by a trade-off between costs and benefits for themselves, their family, and the children concerned. These costs and benefits can be direct – the costs of a school uniform or the income derived from child labor – or be opportunity costs; the income foregone by sending children to school. They can relate to the present and to the future. An example of the latter is the expected higher income as a result of following an education in the present. The parental decision is also assumed to be influenced by cultural patterns and local traditions.

Housework, family business work and work for the market give a direct return to the family. This return can be in cash or in the relief it gives adults, so that the latter can work for the market or in the family business. These forms of child labor are in general regarded as possibly detrimental for the children; because time spent on working cannot be spend on schooling and school-related activities. There is broad evidence that all forms of child labor, including housework and family business work, negatively affect educational participation and attainment of children (Allais, 2009; Amin, Quayes, & Rives, 2006; Assaad, Levison, & Zibani, 2010; Levison & Moe, 1998). This does, however, not always mean that these children are in a bad position compared with children who are able to spend more time on schooling. In developing countries many children end up in occupations for which work experience is more important than formal education. Through "learning by doing" these children may acquire skills they need later in life. From this point of view, the engagement in agricultural and family business work may be considered as education by the parents (e.g. Cigno & Rosati, 2005; Emerson & Souza, 2007). This also applies to housework which often is considered a good preparation for marriage for girls by their parents.

Nevertheless, in spite of these positive returns associated with family business work and housework, in the long run negative individual and social effects dominate. Beegle, Dehejia & Gatti (2004) estimated on the basis of panel data for Vietnam that the short-term effects of family business work on earnings may be positive, but that from age 30 onward the foregone earnings attributable to lost schooling dominate any positive effect. Besides these economic reasons, one can also argue that less schooling leads to fewer capabilities in the spirit of Sen's (1999) Capability Approach; which may reduce individual welfare and social capital. The latter can have detrimental societal effects such as less pressure for openness and transparency. In sum, nonextreme forms of child labor can have short term benefits, such as higher earnings and experience. In the long run negative individual and social benefits seem to dominate.

Sending children to school has relatively high costs in the present. Parents often have to pay for uniforms or books. More importantly though are opportunity costs as the forgone income and work in the household which cannot be simultaneously done. The future benefits can be relatively large if formal education gives access to better paid jobs. This higher income in the future serves the children when they are adults and provides them with future resources, which can also be used to care for the parents when

they are old. In addition, parents might value education as a benefit in itself. Nonetheless, even though parents value the importance of education, they might be constrained by the costs or poor educational infrastructure and feel forced to let their children involve in child labor (Hilson, 2010).

The weight parents attach to each of the characteristics of the different forms of child activity will depend on the child's sex, the economic position of the family, other characteristics of the family, the culture and traditions in the area, the work opportunities, etc. These explanatory variables refer to characteristics at three different levels: the family level, the sub-national level, and the national level. In this chapter, the national level is represented by using data for 16 countries and the sub-national level by distinguishing 214 districts within these countries. Because the larger institutional context in which the household lives is caught by the national level, the district-level variables are expected to represent the more near-by environment of the household (compare Smits, Keij & Westert, 2005).

Figure 6.1 provides the theoretical framework that will guide my analyses. The framework in this chapter looks slightly different from the framework I apply in the rest of this thesis, but the independent variables in this framework can be placed under the shaping factors explained in the model described in Chapter 3.

SOCIO-ECONOMIC FACTORS

Children of poor families are less enrolled in school (Huisman & Smits, 2009a) and tend to work more (e.g. Basu & Tzannatos, 2003; Basu & Van, 1998; Bourdillon, 2006; Suryahadi, Priyambada & Sumarto, 2005). If parents cannot afford to pay for schooling and paid labor is not a valid alternative, keeping children at home and let them help with housework or in the family business seems a reasonable option.

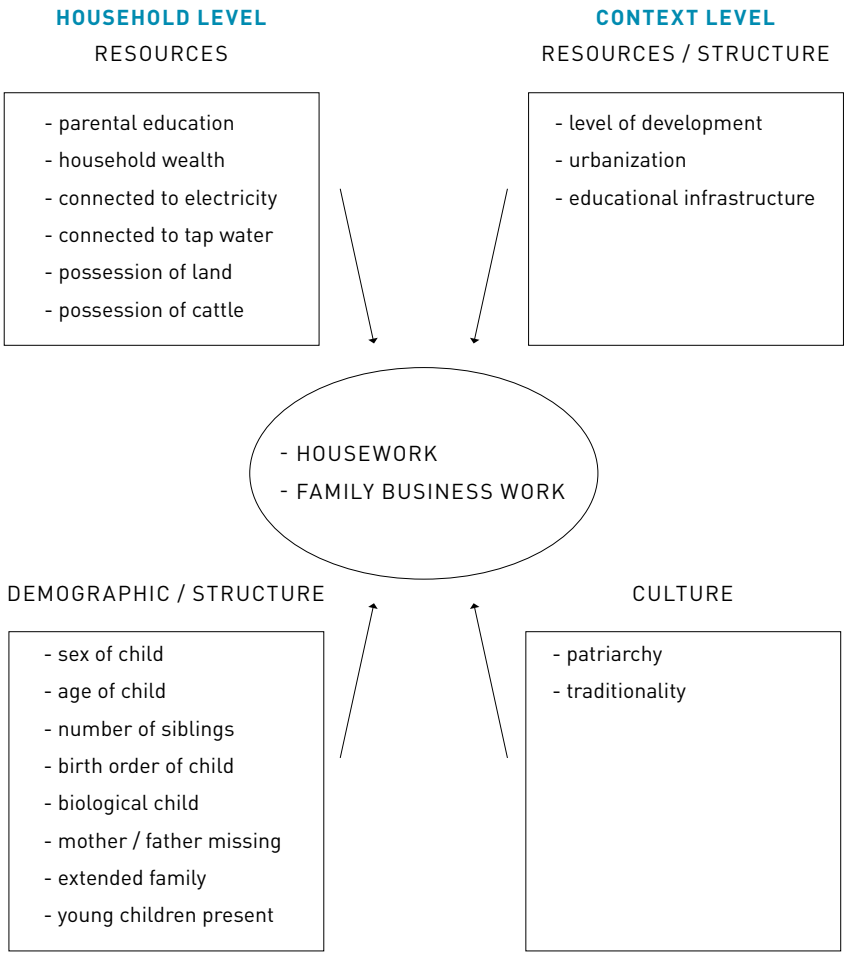
Possession of land and livestock is associated with higher levels of child labor (Goulart & Bedi, 2008). If wealth is measured by land ownership, this phenomenon is known as the "wealth paradox" (Bhalothra & Heady, 2003), which can be explained by a higher labor demand within the family in households rich in land and (or livestock) (Cigno, Rosati & Tzannatos, 2002). Both boys and girls are known to be engaged in herding small animals, whereas boys generally look after large animals (Cockburn & Dostie, 2007). On the other hand, owning large animals like oxen may reduce the household's workload because they can be used for efficiency promoting techniques such as plowing. Similarly, the demand for child labor at home might increase with farm size to the point that parents can afford to hire laborers. After that point children's engagement is expected to decline (Basu, Das, & Dutta, 2010). Hence, the effect of wealth in the form of land or livestock possession on family business work might be nonlinear.

Another important dimension of wealth is being connected to basic services, like electricity and (tap) water. Without such services, household chores are more time-consuming, thus creating a higher demand for children's labor (Guarcello, Lyon & Rosati, 2004; Shafic, 2007). For example, although there are many traditional methods

to conserve food, a refrigerator reduces the number of times to shop for groceries. Fetching water often is a time-consuming activity that is reduced substantially if water is available at the premises (Hutton & Haller, 2004; UN, 2006). Empirical evidence suggests that children, especially girls, are more involved in housework when there is no access to running water (Levison & Moe, 1998). I, therefore, assume that the availability of tap water and electricity reduces the time involvement in housework.

Regarding the effects of parental education, children of educated parents are expected to be less involved in the hidden forms of child labor. Parents who received some education themselves know the value of schooling and its returns and will, therefore, be more motivated to send their children to school (Breen & Goldthorpe, 1997; Mukherjee & Das, 2008). For girls, their mother's education is probably most important, because mothers

Figure 6.1 Determinants of housework and family business work



who have succeeded in completing a certain level of education have experienced the value of education and know that it is within the reach of girls to obtain schooling. Therefore, I expect them to use the bargaining power and insights derived from their higher education to make sure that their daughters work less at home and can go to school (Basu, Das, & Dutta, 2010; Emerson & Souza, 2007; Smits & Gündüz-Hosgör, 2006).

DEMOGRAPHIC FACTORS

Children's engagement in household and family business work might also depend on demographic characteristics and the composition of the household. There are, for example, considerable differences in this respect between boys and girls (Amin, Quayes, & Rives, 2006; Cigno, Rosati & Tzannatos, 2002). An explanation for this can be found in the way parents perceive returns to education. In many cultures, girls are not supposed to pursue an education since they are expected to grow up to be housewives. If they do go to school, parents might believe that learning basic skills, like reading and writing, are enough and take them out of school after two or three years to help their mothers at home (Huisman & Smits, 2009b). Boys often are expected to contribute to agricultural tasks, such as herding animals and plowing, or to assist in the family business. Girls are therefore expected to be more involved in housework and boys more in family business work.

If one of the parents is absent from the household, children are expected to work more because they might have to take over tasks of the missing parent. Therefore, I expect that if the father is not present, boys spend more time on family business work and if the mother is not present girls spend more time on housework. Obviously there might also be spill-over effects leading to an increased workload for all family members if one of the parents is absent.

The family structure of extended families incorporates a shared responsibility for household tasks which may reduce the demand for children's labor within the household. This effect might depend on the composition of the extended family. There are indications that living in an extended family is especially beneficiary if there are grandparents present (Huisman & Smits, 2009a). In developing countries, child fostering is a common practice. They are, for example, sent away to meet a demand for labor in the hosting family or to go to school. There is little empirical information on child labor by foster children. However, it has been assumed that the blood-band between parents and children is the basis for parental altruism and nonbiological children may, therefore, be more involved in (domestic) child labor (Beegle et al, 2010; Ainsworth, 1996).

Birth order and family size might be important too. Firstborn children often have fewer opportunities than their later-born siblings (Chesnokova & Vaithianathan, 2008). Firstborn children often are disadvantaged and are reported to work more which may give their siblings the chance to go to school (Edmonds, 2006; Punch, 2001). With regard to family size, I expect that children are more involved in housework or family business work with every sibling they have, because there are more mouths to feed, more work to be done at home, and higher schooling costs (Emerson & Souza 2008; Patrinos

& Psacharapoulos, 1997). On the other hand, more brothers and sisters means more helping hands, which allows for a division of household labor. This may lead to more time for school for each child (Patrinos & Psacharopoulos, 1997) or, when resources are unequally distributed (Buchmann, 2000), to schooling for some and housework or family business work for others.

Due to the gendered division of housework, girls with more brothers are expected to be more involved in household chores. Likewise, this also implies that boys with more sisters might work less in the household, because the largest share of the work is done by their sisters (Morduch, 2000). The age of the sibling might matter too. As very young children generally constitute a burden to the family, older children (particularly girls) might have to spend more time on housework if there are young children present (Levison & Moe, 1998; Boockmann, 2010; Cockburn & Dostie, 2007).

CONTEXT FACTORS

Previous research indicates that the outcome of parental decisions regarding labor engagement and educational participation of their children depends on the context in which the family lives (e.g., Huisman & Smits, 2009a; Webbink, Smits & de Jong, 2013). Important factors in this respect are the local context's level of development and degree of urbanization. In more modern areas, there is more impact of globalization, including the diffusion of value patterns that stress the importance of education and gender equality. In urban areas, the road and transport infrastructure is generally better, the state influence is stronger, and there may be more pressure on parents to send their children to school. Both engagement in housework and family business work are, therefore, expected to be lower in more developed and urban areas.

An important cultural factor is the position of women in the region where the household lives. There is broad evidence that women's empowerment improves their children's well-being, health, and school enrolment (e.g. Hobcraft 1993; Huisman & Smits 2009a; Mukherjee & Das 2008). It is therefore expected that parents invest more in the education and welfare of children (especially daughters) and that they are less engaged in housework and family business work in environments with a better position of women.

Kinship patterns may also influence parent's decisions regarding child labor (Kambhampati & Rajan, 2008; Bass, 2004)). When girls marry within the families of their husbands, investing in their education might not be considered worthwhile (Gündüz-Hoşgör & Smits, 2008). This could explain why girls are more involved in household chores in patriarchal areas (e.g. Kambhampati & Rajan, 2008).

6.3 DATA AND METHOD

DATA

Data are used from the third wave (2005–06) of UNICEF Multiple Indicator Cluster Surveys (MICS, www.childinfo.org) for five developing countries in Asia and eleven in Africa. The data are derived from the Database Developing World (www.datdevworld.

org), a multilevel data infrastructure in which MICS and other surveys are connected and supplemented with context information at district and national level. The countries are Burundi, Central African Republic, Côte D'ivoire, Gambia, Ghana, Guinea Bissau, Sierra Leone, Togo, Malawi, Mauritania, Somalia, Bangladesh, Syria, Thailand, Vietnam and Yemen.

Besides household-level data, context information at the district and national level is used. Within the 16 countries, 214 districts can be distinguished for which I included district-level context factors. Since the samples are large, these district-level variables could be created by calculating the district's average of households' and individuals' characteristics (compare Huisman & Smits, 2009a). Given the enormous cultural and institutional differences between Asia and Africa, separate analyses for these continents are performed. Since Yemen is geographically very close to Africa and has more in common with its African neighbors than the Asian, Yemen is included in the African subsample.

METHOD

Similar to the analyses in Chapter 5, the data are analyzed with multilevel regression models (Snijders & Bosker, 1999), with hours spent during the past week (seven days) on household and family business work as dependent variables. Because I use data on families nested within districts nested within countries three-level models are applied and explanatory variables at each of these levels of aggregation are included.

The analyses focus on children aged 8–13. The questions on hidden child labor in the MICS surveys are formulated as follows. For housework: "During the past week did (name) help with household chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children?" and if answered with yes: "About how many hours did he/she spend doing these chores?". For family business work: "During the past week, did (name) do any other family work (on the farm or in a business or selling goods in the street)?" and if answered with yes: "About how many hours did he/she do this work?". The housework and family business variables have a minimum value of 0 hours and a maximum of 95 hours.

Independent variables at the household level are socio-economic characteristics (parental education, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Household wealth is measured by an index constructed on the basis of household assets, such as TVs, cars, telephones, and housing characteristics, such as floor material, roofing, and toilet facilities. Education of the father is measured with three categories. Given the low educational levels of the mothers, their education was measured with a dummy indicating whether or not she completed primary education. Landownership is measured with a dummy variable indicating whether or not any member of the household owns land that can be used for agriculture. Ownership of cattle is measured with a dummy variable indicating whether or not

a household owns livestock, herds, other farm animals, or poultry. As these variables for ownership of land and cattle were lacking for three of the Asian countries, these are not included in the analyses for Asia. The presence of tap water and electricity are measured with a dummy indicating whether or not these facilities were present in the dwelling.

Age of the child is measured in years. Number of sisters and brothers and birth order are interval variables. Presence of the parents is measured with dummy variables indicating whether or not the mother or father is missing from the household. Extended family structure is measured with three categories: nuclear family, more than two adults in the household but no grandparents and more than two adults in the household including grandparents. Urbanization is measured by a dummy indicating whether or not the household lives in a rural area. For educational infrastructure I use the average number of years of education for people aged over 13 in the district. As a measure of traditionality of the district the average difference in age between husbands and wives (age husband minus age wife) is used. Patriarchy is indicated by the percentage of married couples living in households with grandparents from father's side, indicating the tradition of girls to marry into the family of their husband.

For children with a missing parent, the dummy variable adjustment method (Allison, 2001) was used to address missing values on the parental characteristics. In this procedure, the cases with missing values get the mean of the valid values and a dummy is added to the model to identify the cases for which the mean was substituted. According to Allison (2001, p. 87), this procedure delivers unbiased estimates of the variables if the missing values are due to non-existence of the respective cases, as is the case here with the characteristics of parents who are missing.

By adding quadratic terms to the models, I tested for nonlinearity of the continuous variables. To test whether the effects of the explanatory variables differ between boys and girls interactions between all variables and sex were computed. If the interaction was significant, separate coefficients for boys and girls were estimated. If not, a general coefficient was presented. In this way, a clear and concise overview of the relevant coefficients is obtained. To address the possibility that effects differ between urban and rural areas, I also tested for interactions with urbanization and added the significant interactions to the model.

6.4 RESULTS

In Chapter 4, I showed that a large number of African and Asian children are involved in housework and family business work for many hours a week and that the size of the problem differs among countries and between the continents. In some countries many more children are involved and many more hours are worked than in others. Preliminary analyses show that also within countries large differences between districts can exist. In the multilevel analyses, this variation is used to gain insight into the effects of the circumstances under which families live on the hidden forms of child labor.

MULTIVARIATE ANALYSES

The variance components in Chapter 4 of the multilevel regression models explaining hours spent on housework show that in Asia 78 percent and in Africa 70 percent of the variance is due to factors at the level of the household. For the models explaining hours spent in family business work, the household component is 86 percent in Asia and 64 percent in Africa. These figures show that factors in the nearby environment of the child and household are much more important than factors farther away, and that nearby factors are particularly important in Asia.

Table 6.1 and 6.2 present the regression coefficients of the multilevel models for housework and family business work. The coefficients for Asia are presented in columns 1, 2 and 3; those for Africa in columns 4, 5 and 6. For those variables that interacted significantly with sex, separate coefficients for boys and girls are presented; otherwise a general coefficient is presented under "All" (columns 1 and 4).

HOUSEWORK

Table 6.1 shows mixed results for the effects of resources at the household level. The effect of father's education is at first sight counterintuitive. Both boys and girls tend to work more in the household if their father is more highly educated and this effect is stronger for boys. Only for girls in Asia with a father with more than primary education we see the expected housework- reducing effect. A possible explanation for the unexpected effect of father's education is that this variable catches to a certain extent the effect of the father's work (which is not available in the data). Fathers with at least some education can be expected to work more often outside the home than fathers without education (who may be working in simple jobs close to their homes, if they have work at all). The wives of these fathers carry the responsibility for all the work to be done at home; and they therefore, may be more dependent on the labor of their children.

As expected, higher education of the mother reduces work hours in Asia, but is not significant in Africa. Household wealth also shows the expected negative effect: Children are significantly less engaged in housework if the household is relatively wealthier. In Asia, boys and girls profit almost equally of household wealth; in Africa, the wealth effect is stronger for boys than for girls. I tested for nonlinear effects of this variable, but it turned out to be linear.

In African households with own land or cattle, both boys and girls spend more time on housework. This is in line with the idea that every adult family member is working in farming households and children have to take over household tasks otherwise done by the parents. For Asia these coefficients could not be estimated, as these independent variables were lacking for most countries. My idea that presence of electricity and tap water might reduce hidden child labor by making housework more efficient is confirmed by the data: Children are significantly less involved in housework if their house is connected to these basic services.

Demographic factors influence the engagement in housework largely as hypothesized. Girls and older children spend more time on housework than boys and younger children. The age effect is significantly stronger for girls. In Africa, the age effect is nonlinear, with hours spent on housework at first increasing more steeply as age increases than in Asia. If the father is missing from the household, children spend more time on housework, probably because the mother has to take over tasks usually done by the father. If the mother is missing, Asian girls work more in the household. In Africa, we see no effect of the absence of the mother on engagement in housework. The effect of living in an extended family is as expected in Asia but not in Africa. In Asia, apparently, mothers and extended family members are willing and able to reduce the hours children have to spend on housework, whereas in Africa they are not. The idea that adopted or foster children would be more involved in housework than biological children is, neither in Asia nor in Africa, confirmed by the data.

Later-born children tend to spend fewer hours on housework than their older siblings. The significant quadratic effect of this variable indicates that household tasks are disproportionally put on the shoulders of the oldest children. Having more siblings generally means more housework for all children. Only Asian girls with more sisters and African boys with more brothers are not more engaged in housework. In Asia, there is an additional effect for girls if there are (more) children under five in the household. Such an additional effect is not found in Africa.

District level variables also have a substantial impact on the children's involvement in housework. Our indicators of development generally show the expected effect, but the coefficients are not always significant. In Asia children work more in the household if they live in a rural area. In both continents, children, and especially girls, work less in the household if they live in districts with a more highly educated adult population (indicating a better educational infrastructure). Urbanization and GDP per capita have no significant effect in Africa. I also estimated (not presented) models with level of development measured by the percentage of households with a TV in the district instead of adult education, but this variable turned out to be insignificant.

Living in a more traditional area, as indicated by a larger average age difference between husbands and wives, does not significantly influence the hours worked by children in the household. Our second cultural district-level indicator, the degree to which women come to live in the household of their partners, is in Asia associated with more housework for children, whereas in Africa it is associated with less housework for children. This might be due to the fact that the patriarchal kinship system in Africa differs from that in Asia. According to Kandiyoti (1988), in rural areas in Africa women are less affected by patriarchal traditional norms and are more involved in work outside the household compared to patriarchal areas in Asia. Perhaps, this also leads to more empowerment and a better living situation for their children.

Table 6.1 Coefficients of multilevel linear regression models for children age 8–13 with hours

	Asia		
	All	**Girls**	**Boys**
	1	**2**	**3**
Household factors			
Socio-economic factors			
Education father			
none			
at least some primary		0.609 **	1.153 **
at least some secondary		-0.386 **	0.450 **
Education mother at least some primary		-0.468 **	-0.238 **
Wealth	-0.056 **		
Household has own land	----		
Household has cattle	----		
Household has tap water	-0.335 **		
Household has electricity		-0.394 **	0.051
Demographic factors			
Sex = boy	-4.087 **		
Age		1.147 **	0.418 **
Age squared			
Father missing		2.076 **	0.847 **
Mother missing		1.605 **	-0.199
Extended family without grandparents		-0.888 **	-0.218 **
Extended family with grandparents		-1.015 **	-0.383 **
Biological child	-0.451		
Birth order child	-1.040 **		
Birth order squared	0.090 **		
Number of sisters		-0.059	0.220 **
Number of sisters squared			
Number of brothers		0.200 **	0.327 **
Number of young children in household		0.273 **	0.054
Economic context factors			
Living in rural area	0.370 **		
Mean years education adults in district		-1.695 **	-0.884 *
National GDP per capita	----		
Cultural context factors			
Mean age difference between spouses in district		0.449	-1.370 **
District % HH with grandparents from father's side		1.807	1.257 **
N	80,373	39,206	41,167

* P<0.05 ** P<0.01

spent on housework as dependent variable

	Africa	
All	**Girls**	**Boys**
4	**5**	**6**
	1.856 **	2.890 **
	1.871 **	3.154 **
-0.117		
	-0.129 **	-0.208 **
	0.374 **	1.371 **
0.408 **		
-0.224 *		
-0.915 **		
-3.591 **		
	1.870 **	1.558 **
-0.045 **		
0.443 **		
-0.314		
0.042		
-0.219		
-0.341		
	-1.226 **	-0.875 **
0.089 **		
0.211 **		
0.030 **		
	0.218 **	0.065
-0.006		
	0.141	0.278
	-2.139 **	-1.630 **
	-0.745	-2.135
	-0.192	-0.026
-1.304 *		
98,145	48,823	49,322

FAMILY BUSINESS WORK

The first interesting conclusion that can be drawn from Table 6.2 is that in Asia the determinants of family business work differ much more between boys and girls than in Africa. This seems to imply that there are differences in the way boys and girls are treated between Asia and Africa. This observation is in line with the idea about stronger gender differences and a weaker position of women as a result of a different kind of patriarchal system in Asia.

Regarding the effect of parental education, we see that in Asia boys work less in the family business if their fathers are more highly educated, which is in line with expectation. In Africa, on the other hand, children are found to work more in the family business if their father has at least some primary education. This might be due to the fact that in Africa, with its much lower level of development (see Table 2.4), people without resources have little opportunity to start a business at all. The effect of mother's education is as expected: children having an educated mother hours spent less time on family business work in both Asia and Africa.

Possession of land and cattle increases the hours that African children are engaged in family business work, but wealthier households in Africa probably have more resources to hire employees for their businesses. In Asian households with tap water, boys are significantly less involved in family business work. Having water on the premises may reduce time needed for irrigation. As irrigation often is a male task (Harris, 2006), this result is in line with findings in other Asian countries. For Asian and African boys, electricity is also associated with less family business work, probably because their manual labor is replaced by electrical equipment.

In Asia, boys work more hours in the family business than girls, but in Africa boys have a significantly smaller workload (after controlling for the other factors in the model). This finding is in line with the idea of stricter gender roles in the Asian patriarchal system and more economic involvement of women in Africa. Older children spend more time on family business work. The effect of age is nonlinear, for Asian girls it accelerates after a low level and in Africa it decelerates after a high level. Having a missing parent does not influence children's time involvement in family business work, but living in an extended family without grandparents increases the workload for boys in Asia. Hence, in contrast with earlier expectations, the presence of more relatively young adult family members may lead to more economic activity in the family business.

Biological children do not work more in family business work than adopted or foster children. However, earlier born children work significantly more than their later born siblings (except for Asian girls). Asian children with more sisters work more in the family business; and in both continents, all children having more brothers are more engaged in this kind of work. Endogeneity might play a role here; parents who run a family business perhaps get more children because they can work as cheap laborers.

Regarding the effect of context factors, there are considerable differences between Asian and African children. Only the effect of living in a rural area is comparable in both

continents: children living in rural areas work more hours on family business work in Asia as well as in Africa. This effect is particularly strong for boys, which again illustrates that family business work is often agricultural work mostly done by boys. In Africa, children work significant less in areas with an on average higher educational level of the adult population. This is in line with the idea that better educational facilities pull children out of family business work and into school. However, in Asia, the effect of adult education is not significant. In Africa, the effect of GDP per capita is not significant, indicating that resource factors further away matter less than close to home.

Living in a more traditional area, as indicated by a larger average age difference between husbands and wives, is in Asia associated with less family business work for girls but not for boys. This finding is in line with the idea that in more traditional areas in Asia, family business work is male work. In Africa no such age-difference effect is found. However, my other cultural indicator, the degree to which women come to live in the household of their partners, is in Africa associated with less family business work for all children. Maybe there are fewer possibilities for family business work in these patriarchal areas to begin with.

6.5 CONCLUSIONS

In this chapter I aimed at gaining insight into the determinants of two hidden forms of child labor – housework and family business work – by analyzing representative data for 178,000 children living in 214 districts of 16 developing countries. Using multilevel analyses, I explained the variation on the basis of socio-economic, demographic and cultural factors at the household, district, and national level. Given the enormous differences between the Asian and African context, the analyses were performed separately for the Asian and African countries in my database.

As shown in Chapter 4, many children spent time on these forms of child labor. In eleven of the sixteen countries over a quarter of children spent more than fifteen hours a week on hidden child labor. Because the involvement in these activities is known to hamper educational enrollment and success of children, these findings are very important. They tell us that policies aimed at reducing child labor should not only focus on market labor, but also on informal labor in and around the home.

To gain insight into the factors at household and context level associated with hidden child labor, multilevel analyses were performed with the hours spent on housework and family business work as dependent variables. A decomposition of the dependent variables' variances revealed that the greatest part of the variance is at the household level; about 80–85 percent of the variation in Asia and 60–70 percent of the variation in Africa can be attributed to the household level. Hence, for developing policies aimed at reducing hidden child labor, the focus should be in the first place on the household level.

As expected, socio-economic characteristics of the household are very influential. If the household is wealthier or the mother has some education, children are generally less involved in these forms of child labor. The effect of education of the father was

Table 6.2 Coefficients of multilevel linear regression models for children age 8–13 with hours

	Asia		
	All	**Girls**	**Boys**
	1	2	3
Household factors			
Socio-economic factors			
Education father			
none			
at least some primary		0.028	-0.330 **
at least some secondary		-0.147	-0.828 **
Education mother at least some primary		-0.159 *	-0.550 **
Wealth	-0.008		
Household has own land	----		
Household has cattle	----		
Household has tap water		0.038	-0.458 **
Household has electricity		-0.021	-0.551 **
Demographic factors			
Sex = boy	1.593 **		
Age		-0.420 **	0.553 **
Age squared		0.026 **	
Father missing	-0.056		
Mother missing	-0.016		
Extended family without grandparents		-0.060	0.187 **
Extended family with grandparents	-0.050		
Biological child	0.069		
Birth order child		0.005	-0.158 **
Number of sisters	0.117 **		
Number of brothers		0.078 *	0.211 **
Number of young children in household	-0.016		
Economic context factors			
Living in rural area		0.201 **	0.483 **
Mean years education adults in district		-0.005	-0.213
National GDP per capita	----		
Cultural context factors			
Mean age difference between spouses in district		-1.340 **	-0.695
District % HH with grandparents from father's side	0.745		
N	80,373	39,206	41,167

* P<0.05 ** P<0.01

spent on family business work as dependent variable

	Africa	
All	**Girls**	**Boys**
4	5	6
0.258 **		
0.054		
-0.212 *		
-0.302 **		
1.471 **		
1.565 **		
-0.110		
	0.149	-0.212 *
-0.121 *		
1.049 **		
-0.028 *		
-0.127		
0.354		
0.135		
	0.256	-0.293
-0.028		
-0.183 *		
0.074		
0.137 *		
0.015		
	1.254 **	2.075 **
	-1.778 **	-2.280 **
	0.723	1.527
0.853		
-1.113 *		
98,145	48,823	49,322

unexpected. Children of educated fathers work more in the household and in Africa also more in the family business. It is possible that educated fathers are more often engaged in work outside the home, and therefore are less able to contribute to housework. If African fathers do work at home, they might more often run a family business which also increases the labor demand within the household.

Children's involvement in both forms of hidden child labor is substantially increased if the household has land or cattle and if they live in a rural area, thus confirming the labor intensity of (family) farm work. Possession of other assets generally reduces the involvement of children in this work. The same is true for the connection to basic services like electricity and water, which may substantially reduce the workload both in the household (e.g. fetching water, shopping) and in the family business (e.g. irrigation, use of machines).

Demographic factors have an important influence. Housework is sex-specific, dependent on age, and birth order of children. Family size, measured by the number of brothers or sisters, is important as well, particular when there are more sons. When the father is absent, all children spend more time on housework; when the mother is absent this is only the case for Asian girls. Children living in extended families in Asia are less involved in housework.

With respect to the role of the context in which the household lives, children are less involved in hidden child labor if they live in more developed (urban, more highly educated) areas. Hence good educational facilities and the influx of modern ideas regarding the children's roles and importance of education might pull children out of child labor. Living in a traditional context means less hidden child labor for African boys and girls and less time involvement in family business work for Asian girls. In Asia this might be due to the stricter gender roles in the Asian patriarchal system, with paid work considered primarily the responsibility of males. The fact that gender differences are much more pronounced in the Asian models is in line with this explanation. The lower levels of hidden child labor in more traditional areas of Africa might simply reflect the lack of any work there.

POLICY RECOMMENDATIONS

The analyses in this chapter reveal that hidden child labor is associated with a large number of socio-economic, demographic, and cultural factors, both at household level and at the level of the context in which the households live. Although the effects of these factors need not be strictly causal, the information on the associations presented here may in several ways help policy makers who want to identify and solve problem situations. Firstly, it provides them with a basic set of variables to look at when diagnosing potential problem situations, together with information on the relative strength of their associations with household and family business work of young children.

Secondly, these analyses suggest that the availability of electricity and tap water on the premises may significantly reduce the number of hours children spend on housework and boys spend on family business work. As children's work does not connect households to these services, this association cannot be caused by reversed causality.

Given the large number of variables in the model it is also unlikely that this is caused by selectivity problems. The theoretical underpinning of these associations is also unambiguous; fetching water, irrigation, daily shopping and many forms of manual labor are time consuming activities that can be reduced very much when water and electricity are available at the premises. Improving these basic facilities in problem areas might, therefore, reduce the time households need to get the work at home done.

Thirdly, besides investments in public utilities, also investments in educational infrastructure might lead to a reduction of hidden child labor. In districts with better facilities, Asian girls were less involved in housework and African children were less involved in both forms of hidden child labor. Policies aimed at increasing educational participation, like investments in infrastructure and monetary transfers conditional on children's school attendance have been found to be highly effective in in different regions of the developing world (e.g. for Uganda: Deininger, 2003; for Latin American countries: Lomeli, 2008; for Cambodia: Filmer, 2006). Theoretical evidence points in this direction as well (Cigno, 2011). Hence governments that aim to reduce hidden child labor might focus on such policies.

Fourthly, children spend fewer hours on both types of child labor if the mother is more highly educated. Hence, policies aimed at reaching the uneducated mothers seem important for improving problem situations. As these mothers generally cannot read or write, an important role has to be played by local agents, like community workers and school teachers, and by the media which can develop information campaigns targeted at these women.

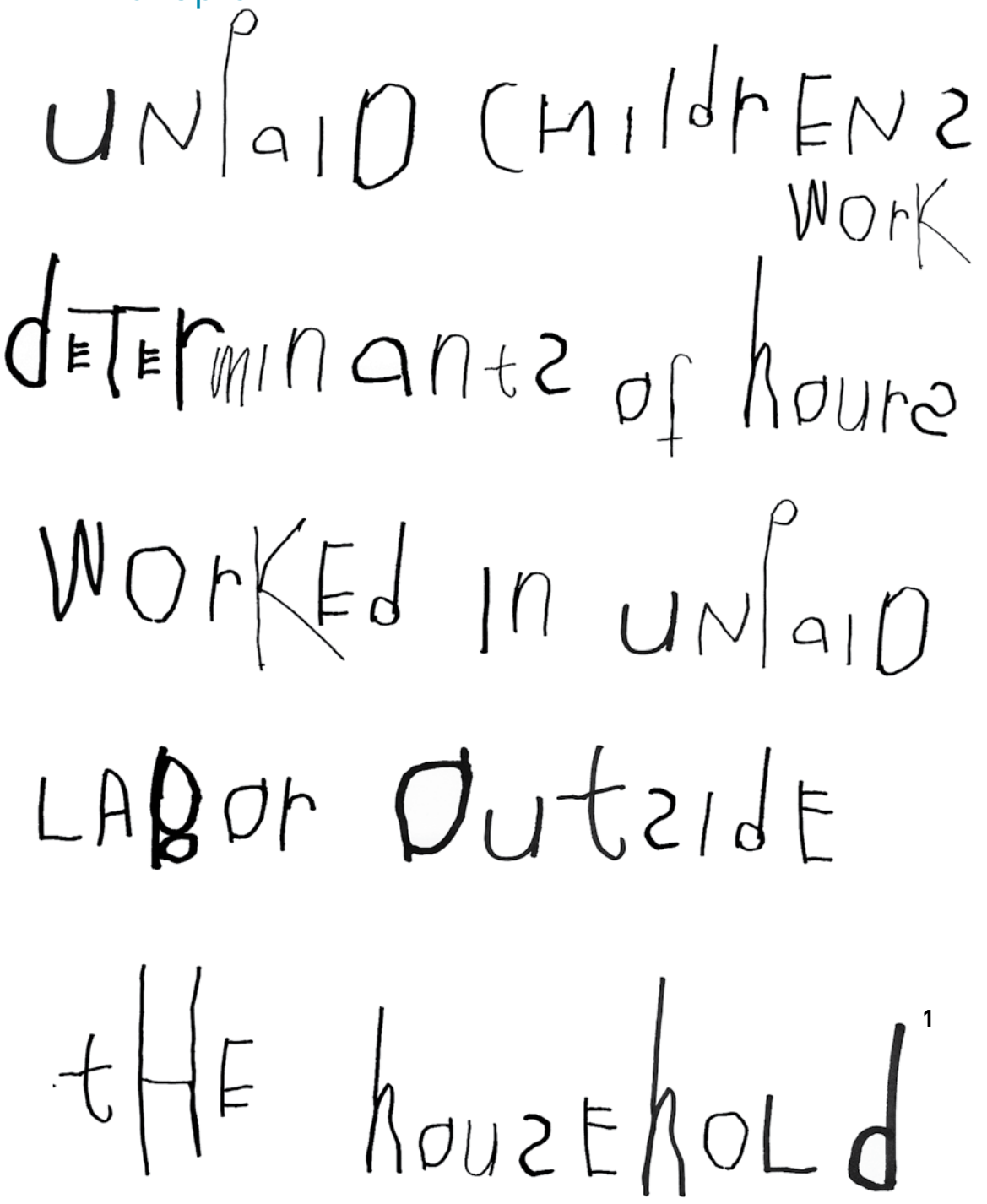
Fifthly, the number of hours worked increases with the number of brothers and sisters. For family business work this might be the result of a deliberate choice of the parents, as children are cheap laborers. However, as far as a large family size is the result of cultural habits, lack of knowledge, or unmet need for contraceptives, the number of hours a family has to spend on housework can be reduced substantially by giving women the information and means to realize a more effective family planning. Hence, a reduction of hidden child labor and increased educational participation might be an important additional benefit of policies aimed at reducing family size and improving family planning.

Besides commercial child labor (analyzed in Chapter 3 and 5) and unpaid work for their own household, children may also be engaged in unpaid work outside their household. Examples of this kind of work are neighboring help in (harvest) peak times and unpaid apprenticeships. In the following chapter, I will research the determinants of hours spent on unpaid work outside the household.

NOTES

[1] This chapter is based on Webbink, E., Smits, J. and Jong, de E. (2012). Hidden child labor: determinants of housework and family business work of children in 16 developing countries. World Development, 40: 631–642.

Chapter 7


UNPAID CHILDREN'S WORK
DETERMINANTS OF HOURS
WORKED IN UNPAID
LABOR OUTSIDE
THE HOUSEHOLD

[1]

7.1 INTRODUCTION

In the previous chapters, I focused on commercial child labor and unpaid housework and family business work. In this chapter I would like to make a step forward in our knowledge about child labor and study the engagement of children engaged in unpaid work outside the household. This type of child labor has not received much attention in the literature until now. This kind of work may range from incidental help to neighbors and unpaid apprenticeships to bonded child labor to pay off debts or even outright forms of slavery. This chapter aims to contribute to the literature by providing figures and studying the determinants of the involvement of children in unpaid work outside their household in 16 African and Asian countries.

When studying the determinants of child labor it is important to study factors at the household level, where parents decide about work and schooling of their children, simultaneously with factors in the context where the children live. Those context factors include the demand for (unpaid) child labor and the economic, cultural and political factors that promote or hinder the engagement of children in this kind of labor (Edmonds, 2008). This chapter provides a cross-national multilevel research in which attributes of both the household level and the local context are jointly researched to determine the factors that influence the engagement in unpaid child labor.

Starting point for the research in this chapter is the theoretical framework for analyzing child labor decisions (Webbink, Smits & de Jong, 2013) described in Chapter 3. To test the hypotheses derived from this framework, I use a unique database containing information of 171,405 children aged 8–13 and their families, living in sixteen developing countries from different regions of the developing world. For each of these children I know whether they are engaged in unpaid labor outside the household and the number of hours they spend on this work. I also have information on the socio-economic and demographic characteristics of their family and of the context in which the households are living. This context information is at the sub-national district level within the countries. Within the sixteen countries studied, 214 districts can be distinguished. Hence there is ample explanatory power at the district level that can be used to test hypotheses on context effects.

To find out which factors at which level of aggregation are most important in explaining the number of hours a child is engaged in unpaid labor outside the household, multilevel regression models – allowing simultaneous estimation of the effects of factors at the household and district level – are applied. In order to address the uniqueness of each situation in the analyses, a study has been conducted how the risk factors vary according to selected characteristics of the context. In this way, I hope to obtain better fitting situation specific information to develop policy measures for solving unwanted situations.

7.2 THEORETICAL BACKGROUND

7.2.1 UNPAID LABOR: BACKGROUND

Although there is a growing literature on children's unpaid work within their own households, unpaid work for others often seems to be invisible. As this work is unpaid and informal of character, it is not included in statistics and therefore no official information on it. The few things known about it are based on qualitative case studies that provide insight into specific situations, but are difficult to generalize. The current study in this chapter explicitly aims to produce more general information.

Based on the existing literature and country reports, I would argue that there are basically four types of unpaid work done by children for non-household members: (1): children who work as a result of the demand for temporary labor in risk sharing local communities (Fafchamps, 1999), (2) unpaid apprenticeships (Morice,1982; Peeters et al., 2009), (3) bonded child labor in which children are 'forced' to work due to tenancy systems or to pay off debts (Otañez et al, 2006; Simelane 1998; Tucker, 1997). Fourth (4), outright forms of slavery where children are sold by their parents or kidnapped and forced to work under extreme circumstances far from their parental home, like in sweatshops or the sex industry. As the focus in this chapter is on forms of unpaid child labor by children residing in their own household, only the first three forms are relevant here. In the next sections, these forms will be discussed in more detail.

RISK SHARING LABOR

The first category includes work done as a result of risk sharing (Fafchamps, 1999). Life is full of risks and fluctuations. Some can be predicted, such as events caused by the changing of the seasons, others are more difficult to anticipate and events such as sickness, deaths and severe draughts can cause temporary income shocks that can lead people in developing countries into extreme poverty. Additionally, life in developing countries is more often dominated by diseases and environmental hazards than in the developed world. There are more outbreaks of epidemic diseases and draughts, and insect swarms pose a serious threat to agricultural crop output. Besides that, most people in developing countries do not work for wages in permanent contracts; resulting in fluctuating (household) incomes.

People cannot insure themselves against these kinds of threats in developing countries and must rely on coping strategies, which I divide into three categories. One way is (1) to reduce the exposure to risk itself (examples are selecting a living environment with low risk of disease or insect plagues; specialization by growing crops that are resistant to environmental risk factors and flexibility in agriculture, such as replanting and weeding decisions), the other is (2) saving or borrowing, and last one is (3) risk sharing. Risk sharing can result into a higher engagement of children in unpaid work (Grootaert & Kanbur, 1995a).

Risk sharing within households is extensively described in the literature (Jacoby & Skoufias, 1997; Grootaert & Kanbur, 1995a; Guarcello, Mealli & Rosati, 2010; Dercon & Krishan, 2000). They describe how resources, such as food and income and labor are divided among the household's family members. It is also argued that parents base fertility decisions on the economic value of children (Levy, 1985; Grootaert & Kanbur, 1995a). Because of the possible endogeneity of fertility, this is difficult to prove, but something can be said in favor of the argument that in some households children are taken out of school in order to serve as a household buffer (Maitra, Panda & Sarangi, 2006). According to this strand of the literature, idle children (who are neither in school nor working for pay), could serve as an 'insurance' for uncertain times, and help during sudden labor shortages. Indeed, empirical research shows that children work during harvest peak periods (Jacoby & Skoufias, 1997). Furthermore, there are indications that risks and "the explicit pooling of resources" also take place in larger communities, such as villages (Fafchamps, 1999). For example, in village communities, property and other resources (food, grains) are shared as an 'insurance' against temporary food and harvest shocks. It is therefore likely that in rural subsistence economies, people expect mutual reciprocity and will also help each other whenever there is work to be done. Hence, with the expectation that they get the favor back when needed, parents will let their children do unpaid work outside the household for their community members.

APPRENTICESHIPS

The second category of unpaid work consists of children working in unpaid apprenticeships in the informal sector. In many developing countries, children work as unpaid learners, for example in the Indian carpet weaving industry (Harvey & Riggin, 1994), metal work in Senegal (Morice, 1982), work in shops run by friends of the family in Sierra Leone (Peeters et al., 2009), selling goods in the streets and working in the carpentry industry in Zimbabwe (Sachikonye, 1991). Since many of these children work long hours under dangerous work circumstances (Sachikonye, 1991), some of these apprenticeships can be considered child labor instead of tuition. This is also illustrated by case studies, such as Morice's (1982) study. He reports that the apprentices are often school drop-outs and do not work for wages and their status is low and non-institutionalized.

BONDED CHILD LABOR

The third category includes children working in rural tenancy systems. Under these systems, farmers grow their crops on tenured land. The farmers and landlords agree that the farmer receives seeds, utensils and other supplies from the landlord. In return, the farmer sells the harvest produce for a reduced price. In these systems, often only one employee is paid, but his entire household (including children) helps to meet production quota. According to ILO (2002), who refers to these kinds of arrangements as 'bonded child labor' and 'modern slavery', many children all over the world are forced to work in agriculture. Debt bondage is especially common in rural areas with its traditional class

and caste structures. Particularly groups with less resources and a lack of access to credit are the victims of these arrangements (ILO, 2002; Basu & Chau, 2004).

Bonded child labor can be found in small scale agriculture, in which land, seeds or crops are provided in return of the harvest. It also takes place on large scale commercial farms and plantations, where tobacco (Otañez et al, 2006), sugar cane, tea, or rubber (ILO, 2002) is grown. In Asia, bonded labor is also reported to occur in commercial fishing industries (Edmonds, 2003). These arrangements resemble the common tenancy structures in traditional colonial countries such a colonial Swaziland, where boys are, for example, reported to be engaged in cattle herding (Simelane, 1998).

Bonded child labor is not restricted to agriculture and rural areas, but can also be found in urban areas, for example in the carpet weaving industry (Tucker, 1997), where poor parents often feel forced to sell a child into bondage. It is difficult to get accurate estimates on the incidence of bonded child labor, but it has been reported for at least 40 countries by Basu and Chau (2002).

7.2.2 THEORETICAL FRAMEWORK

To guide my research, I use a theoretical framework developed in earlier work (Webbink, Smits & de Jong, 2013), that was inspired by models for understanding women's labor market participation (Spierings, Smits & Verloo, 2010; Hijab 2001). The framework, presented in Figure 3.1 of Chapter 3, is a general model that can be applied to all forms of child labor, including unpaid forms. As discussed in Chapter 3, it is based on four pillars: (1) The context in which children live has different levels (household, local, national, international). (2) Decisions regarding child labor are made at the household level, by parents, caretakers and / or other family members. (3) Different factors at the different levels influence these decisions simultaneously. (4) The strength of these influences may differ between contexts.

In this framework, the factors affecting decisions regarding unpaid child labor are grouped under three conditions according to the underlying causal mechanisms. These conditions are called resources, structure and culture. Resources are the means by which households can provide their members with food, shelter, education and health, as well as the services, regulations and information available in the context that may help households fulfill these needs. Structure refers to structural characteristics of households (e.g. nuclear or extended family, number of children, absence of parents) and of the context in which they live (e.g. labor market, legal framework). Culture encompasses local and national views of society on childhood, children's work and the role of women. In the next sections, the factors grouped under the conditions are discussed in more detail.

RESOURCES

Of the resources available at the household level, income or wealth often is generally considered the most important factor influencing child labor (Basu & Van, 1998;

Grootaert & Kanbur, 1995a; Ranjan 1999; Nkamleu & Kielland, 2006), but it cannot explain in a straightforward manner why children work in unpaid child labor. However, a lack of resources can explain why some children are not in school or idle. It is argued that idle children sometimes serve as a household buffer to be prepared for idiosyncratic or collective shocks (Guarcello, Mealli, & Rosati, 2010; Maitra, Panda & Sarangi, 2006) and I therefore expect that children from poorer families are more engaged in unpaid work for others outside their household.

Income/wealth is not the only resource-related factor that plays a role; other socio-economic resources, like parental education, employment status, and job-level may be important too. Similar to earlier research, children of more highly educated parents are expected to be more in school and less engaged in unpaid labor, because their parents want their children to reach at least the same educational level as they have reached themselves (Breen & Goldthorpe, 1997; Webbink, Smits & de Jong, 2013; Huisman & Smits, 2009a).

In the previous section, I argued that unpaid work often consists of work done during peak times. I expect that children living in households owning land or livestock are more often involved in unpaid work for others, as their parents can expect help from their neighbors in return.

Economic development at the district level is a context-level resource. However, the effect of development on children labor engagement could be both positive and negative. I expect that unpaid labor mostly takes place in less developed areas, because the educational infrastructure is worse and the economy relies more on more subsistence agriculture (with risks of failed harvests) and tenancy arrangements. Moreover, laws regarding school and child labor probably are less strictly enforced. On the other hand, more development could also lead to more economic activities and to more unpaid apprenticeship opportunities (Nkamleu & Kielland, 2006).

District educational level is also an important contextual resource factor. It indicates the level of development of the area, but is at the same time related to the availability of educational facilities and to norms about the importance of schooling in the region. As an indicator of the educational infrastructure, district educational level is also a structural factor; hence I will come back to it in the next section.

STRUCTURE

Both family structure (such as the number of siblings) (Edmonds, 2006) and structural context factors (like the labor market and educational infrastructure) (Emerson & Souza, 2008; Duryea & Arends-Kuenning, 2003) may affect children's engagement in unpaid labor. Structural characteristics at the household level can be divided in resource-dilution variables (number of brothers and sisters, birth order) and into structural characteristics of the household which may lead to better access to resources (such as living in an extended family).

Structural characteristics of the context in which children live may influence the demand for child labor. A major factor in this respect is urbanization (ILO–IPEC, 2010a;

ILO 2006). In the case of unpaid labor, I think that tenancy arrangements are mostly located in the rural areas, but many unpaid apprenticeships will be located at (work)shops in the cities. Hence, the effect of urbanization is ambiguous.

CULTURE

Norms and values regarding child labor are expected to influence parent's attitudes towards child labor (Lieten, 2003; López-Calva, 2002; Nieuwenhuys, 1994; Delap, 2001). Cultural factors can be distinguished in values about the labor market participation of children (and views on childhood), the role of women in the public sphere, and the adaptation of modern values.

The way children and child labor are looked upon is not everywhere the same and is closely related to the position of women (Kandiyoti, 1988). With regard to unpaid labor, views on childhood and labor engagement may be gender-specific and depend on the context in which children live. With regard to unpaid labor as a way of risk sharing, both girls and boys are expected to be equally involved in unpaid labor for others when there is a sudden peak demand. During these times, all helping hands will be asked to join. On the other hand, I expect that boys work more as unpaid apprentices, because these arrangements are mostly found in the informal crafting and manufacturing sector. With regard to bonded labor, girls and boys are expected to be about equally involved. However, girls probably work more often as domestic laborers, but testing this is beyond the scope of this chapter.

As cultural context factors, the position of women and patriarchy may affect the involvement in unpaid labor. In more traditional areas, boys are more often expected to take over the family business. Because an apprenticeship is a form of learning by doing, boys living in more traditional areas are more likely to be engaged in unpaid labor. As girls are expected to marry into their husband's family and to be housewives, girls living in more traditional and patriarchal systems are expected to be less in school and more engaged in unpaid work. However, since patriarchal systems dominant in Africa allow women to be more involved in work outside the household (Kandiyoti, 1988), it is expected that the involvement in unpaid labor outside the household by girls is higher in Africa than in Asia.

RURAL-URBAN DIFFERENCES

The theoretical framework's fourth pillar is the idea that effects of risk factors of child labor may differ depending on the circumstances. In this respect, I focus on differences between urban and rural areas. In urban areas of developing countries, facilities are often better, the influence of globalization stronger, and the idea that child labor is objectionable and children should be in school more dominant (Huisman & Smits, 2009a). In those areas, children are expected to work less and be more in school, even if they are (relatively) poor. In rural regions, schooling may entail higher costs due to more limited availability and accessibility of schools (Hazarika, 2001; Huisman & Smits, 2009a; Mu-

gisha, 2006). Under these circumstances, both poorer and wealthier parents have fewer possibilities to send their children to school and might choose to let them help at home or their neighbors. Hence according to the situational dominance hypothesis, the effects of resources depend on the circumstances (compare Spierings, Smits & Verloo, 2010) and are likely to decrease.

In addition, I also expect that the nature of work and circumstances in rural areas might lead to stronger effects of specific resource factors. As neighboring help is expected to occur more in rural areas, the effect of living in an agricultural household is likely to be reinforced in rural areas, because there is more work to be done. In this case, a higher demand for child labor and work opportunities dominate.

7.3 DATA AND METHODS

DATA

Data are used from the third wave (2005–06) of UNICEF Multiple Indicator Cluster Surveys (MICS, www.childinfo.org) for five developing countries in Asia and eleven in Africa. The data are derived from the Database Developing World (www.datdevworld.org), a multilevel data infrastructure in which MICS and other surveys are connected and supplemented with context information at district and national level. The countries are Burundi, Central African Republic, Côte D'ivoire, Gambia, Ghana, Guinea Bissau, Sierra Leone, Togo, Malawi, Mauritania, Somalia, Bangladesh, Syria, Thailand, Vietnam and Yemen.

Besides household-level data, context information at the district and national level is used. Within the 16 countries, 214 districts can be distinguished for which I included district-level context factors. Since the samples are large, these district-level variables could be created by calculating the district's average of households' and individuals' characteristics (compare Huisman & Smits, 2009a). Given the huge cultural and institutional differences between Asia and Africa, separate analyses for these continents are performed. Since Yemen is geographically very close to Africa and resembles its African neighbors more than its Arab neighbors, Yemen is included in the African subsample. To control for domestic slavery, only children related to the household head are included.

METHOD

The data are analyzed in a similar way as the analyses in Chapter 4 and 5 with multilevel regression models (Snijders & Bosker, 1999), with hours spent during the past week (seven days) on unpaid labor as the dependent variable. Because I use data on families nested within districts nested within countries, three-level models are applied and explanatory variables at each of these levels of aggregation are included. The district and country differences in unpaid labor are dealt with by estimating random intercepts at the district and country level.

The analyses focus on children aged 8–13. The questions on the engagement of work for others outside their household in the MICS surveys are formulated as follows: "Dur-

ing the past week did (name) any kind of work for someone who is not a member of this household?" and if answered with yes: "For pay in cash or kind" (which could be answered with "Yes, for pay", No, unpaid" and "No") and: "About how many hours did he/she do this work for someone who is not a member of this household?" I constructed a variable on the basis of these questions indicating how many hours a child spend on unpaid labor for others outside their household. This variable has a minimum value of 0 hours (for the children who were not engaged in unpaid labor) and a maximum of 95 hours.

Independent variables at the household level are socio-economic characteristics (parental education, household wealth), demographic characteristics (sex, age, number of brothers and sisters, birth order, whether or not the child is a biological child and household composition). Household wealth is measured by an index constructed on the basis of household assets, such as TVs, cars, telephones, and housing characteristics, such as floor material, roofing, and toilet facilities. Education of the father is measured with three categories. Given the low educational levels of the mothers, their education was measured with a dummy indicating whether or not she completed primary education. As a proxy for agricultural parental occupation, I constructed a dummy variable whether or not a household owns both land that can be used for agriculture and livestock, herds other farm animals, or poultry.

Age of the child is measured in years. Number of sisters and brothers and birth order are interval variables. Presence of the parents is measured with dummy variables indicating whether or not the mother or father is missing from the household. Extended family structure is measured with three categories: nuclear family, more than two adults in the household but no grandparents and more than two adults in the household including grandparents. Urbanization is measured by a dummy indicating whether or not the household lives in a rural area. For educational infrastructure I use the average number of years of education for people aged over 13 in the district. As a measure of traditionality of the district the average difference in age between husbands and wives (age husband minus age wife) is used. Patriarchy is indicated by the percentage of married couples living in households with grandparents from the father's side, indicating the tradition of girls to marry into the family of their husband.

For children with a missing parent, the dummy variable adjustment method (Allison, 2001) was used to address missing values on the parental characteristics. In this procedure, the cases with missing values get the mean of the valid values and a dummy is added to the model to identify the cases for which the mean was substituted. According to Allison (2001, p. 87), this procedure delivers unbiased estimates of the variables if the missing values are due to non-existence of the respective cases, as is the case here with the characteristics of parents who are missing.

By adding quadratic terms to the models, I tested for nonlinearity of the continuous variables. To test whether the effects of the explanatory variables differ between boys and girls, interactions between all variables and sex were computed. If the interaction was significant, separate coefficients for boys and girls were estimated. If not, a general

coefficient was presented. In this way, a clear and concise overview of the relevant coefficients is obtained. To address the possibility that effects differ between urban and rural areas, I also tested for interactions with urbanization and added the significant interactions to the model. When an interaction effect is significant for rural areas, it means that the effect is significantly higher or lower in rural areas.

7.4 RESULTS

MULTIVARIATE ANALYSES

The variance components of the multilevel regression models (in Chapter 4) on hours worked on unpaid labor show that in Asia 99 percent and in Africa 87 percent of the variance is due to factors at the level of the household or of the local community in which the household lives. These percentages are relatively high and indicate that children's engagement in unpaid labor is largely driven by factors close to home.

Table 7.1 presents the regression coefficients of the multilevel models for unpaid labor. The coefficients for Asia are presented in columns 1, 2 and 3; those for Africa in columns 4, 5 and 6. For those variables that interacted significantly with sex, separate coefficients for girls and boys are presented; otherwise a general coefficient is presented under 'All' (columns 1 and 4). Significant interactions with living in a rural area are presented under the main results. Note that the presented main effects are average effects across urban and rural areas. In order to keep the interpretation of the results comprehensive, I will discuss the significant interaction effects after in a separate section.

The first conclusion that can be drawn from Table 7.1 is that the background characteristics of unpaid labor differ more between girls and boys in Asia than in Africa. As can be seen from the separate columns for girls and boys in Table 7.1, in Africa only two effects are significantly different between girls and boys, whereas in Asia, more differences occur. This result is consistent with the results for paid work in Chapter 5.

Turning to the socio-economic factors, we see that Asian children with a father with a higher education are less engaged in unpaid labor than children with lower educated fathers. In Africa, there is, on average, no effect of fathers' education. In Asia, the education of the mother only influences boys' engagement in unpaid labor; hence it seems that more educated mothers use their bargaining power in favor of their sons. Children with a higher educated mother work more hours on unpaid labor in Africa. Although I could not control for mother's occupational status, it could be that these women work outside their household and take their children along to help. It is also possible that both the mother and her children are hired for the job, while the mother is the only one who gets officially paid. Wealth has the expected effect in Asia: in wealthier households, children are less engaged in child labor. In Africa, the effect is nonlinear. As wealth rises until the tipping point around the fourth wealth decile, children are more engaged in unpaid labor; after that point, the expected decline in work hours is observed. There may be two explanations for this nonlinear effect. Firstly, the poorest children might be

more engaged in paid labor and have no time to be engaged in unpaid labor. Secondly, this result might reflect the nature of unpaid work in risk sharing communities. Poorer households probably do not have their own farm or business and are less likely to have a network and a social safety net, hence they simply cannot engage in the 'reciprocity economy' of risk and labor sharing.

I assume that basic services such as running water and access to electricity are community based and lead to more efficient techniques and hence to a smaller demand for unpaid labor. Interestingly, the availability of electricity reduces hours in unpaid labor for boys in Asia, but in Africa for girls. Perhaps, Asian boys work more as apprentices in workshops doing manual labor that will replaced by machines if there is electricity available.

Structural characteristics at the household level influence the engagement in unpaid labor. However, there are many differences between Asia and Africa. In Asia, boys are significantly more engaged in unpaid labor for others outside their household than girls, which suggest that the place of girls is more in the household. Remarkably, in Africa, girls work slightly fewer hours; indicating that the gender division in Africa is less distinct. As in most child labor studies, the number of hours worked increases with age; indicating that older children are more able to perform unpaid labor and that parents and society allows them to. Note that this is not the case for Asian girls. Boys living in extended families in Asia spend less time on unpaid labor, indicating that adults are preferred to children as unpaid laborers. In Africa, later born children spend less time on unpaid labor, allowing them to spend more time on other activities, such as schooling. According to the significant quadratic term, after the fourth child, later born children are more engaged in unpaid labor.

There are several significant effects at the district level. The context factors are gender-specific and only influence the engagement in unpaid labor by boys. In Asia, unpaid child labor seems to be an urban phenomenon. In Asia, boys probably work as apprentices in the cities, for example in the leather tanning industry in Bangladesh, where many boys are reported to perform unpaid work (Lieten et al., 2010). In areas with a better educational infrastructure, indicated by the average number of years of education of adults, boys seem to profit from these facilities and are less engaged in unpaid labor. In areas with a higher age difference between spouses, Asian boys are more engaged in unpaid child labor. In my opinion, this indicator could also reflect a more traditional economy with more tenancy structures or mutual reciprocal neighboring aid. In Africa, there are no direct significant effects of context factors, but there are many significant interaction effects with urbanization.

To summarize, the descriptives in Chapter 2 indicate that Asia and Africa are in different phases of development. There are also many differences in the involvement and determinants of unpaid work between the continents. In Asia, boys spend more hours on unpaid labor and this mostly takes place in urban areas. In Africa, girls and boys are about equally involved in unpaid labor and this work is more often done when the pa-

Table 7.1 Coefficients of multilevel linear regression models for children age 8–13 with hours

	Asia		
	All	**Girls**	**Boys**
	1	**2**	**3**
Household factors			
Socio-economic factors			
Education father			
none			
at least some primary	-0.079 **		
at least some secondary	-0.107 **		
Education mother at least some primary		-0.031	-0.133 **
Wealth	-0.017 **		
Wealth squared			
Household has tap water	0.000		
Household has electricity		0.017	-0.124 **
Household has land & livestock		--	--
Demographic factors			
Sex = boy	0.319 **		
Age		0.013	0.082 **
Father missing	0.008		
Mother missing	0.136		
Extended family without grandparents		0.005	-0.087 **
Extended family with grandparents	0.032		
Biological child	0.227		
Birth order child	-0.019		
Birth order squared	---		
Number of sisters	0.007		
Number of brothers	0.006		
Number of young children in household	-0.001		
Economic context factors			
Living in rural area		-0.014	-0.274 **
Mean years education adults in district		-0.020	-0.170 **
Cultural context factors			
Mean age difference between spouses in district		0.007	0.072 *
District % HH with grandparents from father's side	0.015		

Table 7.1 Continues on next page

spent on unpaid child labor as dependent variable.

	Africa	
All	**Girls**	**Boys**
4	**5**	**6**
0.037		
-0.084		
0.090 **		
0.086 **		
-0.010 **		
0.035		
	-0.124 **	0.046
0.095 **		
-0.058 *		
0.060 **		
-0.012		
0.142		
-0.014		
0.052		
0.052		
-0.085 **		
0.010 **		
-0.001		
0.000		
0.017		
-0.029		
-0.003		
	-0.053	0.013
0.189		

Table 7.1 Continued

	Asia		
	All	**Girls**	**Boys**
	1	**2**	**3**
Interactions with rural area			
Education father at least some primary	--		
Education mother at least some primary		-0.014	0.191 **
Household has tap water	--		
Household has electricity		-0.132	0.550 **
Age	--		
Father missing	--		
Mother missing	0.433 **		
Number of brothers	0.047 **		
Number of young children in household	--		
Household has land & livestock	--		
Mean years education adults in district	--		
N	77,873	38,229	39,644

rents are involved in agriculture. I therefore think that unpaid child labor in Asia mostly is done by unpaid apprentices; in Africa unpaid children's work is work done at neighboring farms, most likely during peak harvest times.

INTERACTIONS WITH URBANIZATION

To test the fourth pillar of the model, the idea that determinants of child labor are different under different circumstances, I analyzed interaction effects with living in a rural area. In Asia, there are fewer differences between urban and rural areas than in Africa. Moreover, in Asia also two three-way interaction effects are only significant for boys, as can be seen from the different effects for boys in column 3.

The interaction effects with urbanization all increase work hours on unpaid labor. The beneficiary effect of mother's education for boys disappears in rural areas. Moreover, in rural Asia; boys work more hours if their household has access to electricity. Perhaps access to electricity works both ways. It reduces time spent on housework (compare Chapter 6) for girls in Asia, but it also means increased productivity in small businesses otherwise impossible if not connected to basic services. There are no direct effects of having a missing parent in Asia. However, in rural areas, Asian children with a missing mother are more engaged in unpaid labor. This could indicate that these children rely on help from neighbors or others in their community and work to return the favor. Lastly in rural areas in Asia, children with more brothers spend slightly more time on unpaid labor than the average. It could be that this effect reflects a more traditionally

	Africa		
	All	Girls	Boys
	4	5	6
	-0.327 **		
	0.124 *		
	-0.148 *		
	--		
	0.031 *		
	0.115 *		
	--		
	-0.048 **		
	-0.076 **		
	0.175 *		
	0.084 *		
	93,532	46,684	46,848

oriented family structure in which unpaid labor through apprenticeships is more important than formal schooling.

In Africa, the significant interaction effects with urbanization are both positive and negative. For example, in rural areas in Africa, children with a father with at least some primary education are less engaged in unpaid work for others. This supports the educational dominance hypothesis and implies that parents with a higher education put more effort into giving the child the opportunity to go to school. (Spierings, Smits & Verloo, 2010).This is not the case for mother's education. In rural areas, the child labor increasing effect of mother's education is even stronger. This might indicate that children go along with their mothers and help out while they are on the job. In contrast to Asia, the availability of tap water reduces hours children spend on unpaid labor in rural areas. They might be less engaged in water fetching or irrigation related task for their neighbors. The effects of structural characteristics at the household level are also different in rural areas. Older children work even more hours in rural areas than the average. Similar to the effect of mother missing in rural areas in Asia, children with a missing father are more engaged in unpaid labor. They might also rely on neighboring help and return the favor with unpaid labor. On the other hand, in rural Africa, it appears that brothers alleviate some of their siblings' workload. If there are young children in the household in rural areas, children have less time to be engaged in unpaid work.

The effect of having land and livestock is reinforced in rural areas, supporting the idea that unpaid work in Africa is mostly neighboring help for other community mem-

bers. The second interaction effect with the average years of adult education indicates that in areas with a better educational infrastructure, children spend more hours on unpaid labor. This could reflect more possibilities to engage in unpaid apprenticeships in manual professions in these areas.

7.5 CONCLUSIONS

I aimed at gaining insight into the determinants of unpaid children's work, by analyzing representative data for 171,500 children living in 214 districts of 16 developing countries. Using multilevel analysis, I explained the variation on the basis of socio-economic, demographic and cultural factors at the household and the context level.

The Asian countries in my sample all have a higher level of development than the sub-Saharan African countries; which is reflected by, amongst others, higher educational levels and the higher proportion in Asia having access to electricity. Given these differences between the Asian and African context, the analyses were performed separately for the Asian and African countries in my database.

I showed in Chapter 4 that in the week prior to the survey, on average, around 0.5 to 20 percent of the Asian and African children have worked for others outside their household. In countries with a relatively low engagement, children who are engaged in unpaid labor have the largest workload compared to children living in countries with a relatively low engagement. Taken these findings into account, it is very important to shed more light on the factors that drive parent's decision on their children's engagement in unpaid labor.

The descriptive analyses show that, in general, children in Africa are more often engaged in unpaid labor than in Asia. In my opinion, this could be explained by the differences in the level of development and their economic systems. The multilevel regressions reinforce the differences between Africa and Asia. For example, in Asia, the involvement in unpaid labor by children is, to a large extent, influenced by resources at the household level. A higher educational level of both parents reduces the number of hours children spend on unpaid work, but the education of the mother (at least some primary) only matters for boys. However, boys and girls profit equally from living in wealthier households in Asia. These results confirm that more access to resources leads to less involvement in unpaid child labor in Asia.

In Africa, children's engagement in unpaid labor is influenced by resources at the household level in a different manner than in Asia. For example, father's education has, on average, no effect on the engagement of children in unpaid labor. However, a higher education of the mother is related to more unpaid labor. Perhaps these children work alongside their mothers. The idea that unpaid labor is often neighboring help is supported by the effect of wealth in Africa. We see that the very poorest children are not engaged in unpaid labor, reflecting the absence of economic productivity, community networks and social safety net.

Structural characteristics at the household level do not seem to influence the engagement in unpaid labor to a large extent. However, we cannot neglect the most

important factor in this respect: gender. In Asia, the place of girls is much more at the home, while in Africa everybody, regardless their sex, seems to help in the unpaid work. Further, In Asia, children are less engaged in unpaid work if they live in an extended family. In Africa, firstborn children are more engaged in unpaid labor, indicating that they have to work in order to give their siblings an opportunity to perform other activities.

The effects of the context factors reflect differences between the Asian and African economy and culture. In Asia, only the engagement of boys is affected by characteristics of the context. They work less in urban areas and in districts with better educational facilities. On the other hand, they work more hours in more traditional areas. Unpaid labor seems to have a different character in the African context. In Africa, the direct effect of having land and livestock as well as the interactions with living in a rural area indicate that unpaid labor mostly is work at (neighboring) farms in their community. Besides, one of the characteristics of lower developed economies is that they rely heavily on subsistence farming, which is dominated by temporary shocks and peaks in labor demands. The results of my analyses support the impression that during these peaks everybody is involved in this kind of work in Africa. In Asia, we see different patterns: unpaid labor mostly is an urban phenomenon and it is the boy who is engaged in it. Hence, although Asia is economically more developed, gender differences are much more pronounced. The role of girls and women is that of caretaker within the household and women and girls do not participate much in work outside the family sphere.

The idea that factors may differ under different circumstances is supported by the data. Both in Asia and Africa, we see that there are differences for resource and structural factors. The results of this analysis reinforce the earlier finding that in Asia more effects are gender specific and that in Africa, unpaid labor mostly is an agricultural and rural phenomenon.

In the theoretical section of this chapter, I argued that there may be three kinds of unpaid labor of importance in this study: 1) neighboring help related to crop and risk sharing, 2) unpaid apprenticeships and 3) bonded child labor. Unfortunately, I can only guess what the activities exactly are. The returns to apprenticeships and risk sharing are clear. An apprentice can acquire valuable work experience, and a household helping their neighbors can ask help in return. If children's unpaid work is restricted to these activities, it might not be that bad. Bonded child labor, however, should always be prevented, because the circumstances under which this takes place are usually unfavorable. The children in this study live at home in their own household; hence in this study there are no children held captive as (domestic) laborers. It is possible however, that there are situations where entire households are forced to engage in bonded labor to repay debts. Unfortunately, the data did not allow me to control for this possibility.

That said, in my opinion, I do have unraveled some of the mysteries of children's unpaid labor. Considering the level of development in Asia and Africa, I would argue that that the results of my analyses resemble two different prevalent forms of unpaid labor. Firstly, unpaid children's work in Asia often involves apprenticeships in which boys learn

for their future professions. Secondly, in Africa, unpaid work is dominated by work with a rural agricultural character in which everybody helps out. Although the general engagement is lower in Asia, children who work are often engaged in unpaid labor for many hours. It could be argued that apprentices learn by doing for their future professions. On the other hand, it is also often reported that they work very long hours under sometimes dangerous circumstances. In Africa, the proportion of children working long hours in unpaid work is lower than in Asia. Because they may also perform other activities such as paid child labor, housework and family business work, this might not mean that this work is not a deterrent to their health or education. Moreover, the results of this study suggest that in Africa the very poorest households and children do not have a community network or social safety net. All in all, the results in this chapter show that for an encompassing understanding of child labor all forms should be taken into account to determine whether it has a positive or negative effect on children's development. In the following chapter, I will therefore research the relationship between work hours and school enrollment.

NOTES

[1] This chapter is based on Webbink, E., Smits, J. & de Jong, E. (2012). "Unpaid children's work: Household and context determinants of hours worked in unpaid labor by young children in 16 low-income countries in Asia and Africa".

Part 3

Evaluation and Conclusion

Chapter 8

The Relationship between Child Labor and School Enrollment

8.1 INTRODUCTION

In the child labor literature, scholars and policymakers have continuously focused the attention on the relationship between children's work and school enrollment. Because generally speaking, time spent on working cannot be devoted to school or homework, child labor is often been assumed to be a deterrent to schooling (Zabaleta, 2011; Amin, Quayes, & Rives, 2006; Rosati & Rossi, 2003; Baland & Robinson, 2000; Levison & Moe, 1998). Others (Canagarajah & Coulombe, 1997; Grootaert & Kanbur, 1995b) assume that learning by doing may also provide children with valuable work experience and help them to prepare for adult life. This may especially be the case in the (rural) informal economy of developing countries, where there is less need to pursue a formal education because only a basic knowledge of reading, writing and mathematics is sufficient for many occupations.

Although many researchers have researched the relationship between child labor and schooling, only some have addressed the fact that time involvement is one of the key factors to determine whether children's work is harmful. Since children are expected to be present in school and the workplace according to fixed time schedules, this could very well be the case. Because housework and family business work can be planned after school hours, it could be highly likely that this work interferes to a lesser extent with schooling. When there is a correlation between children's work and schooling outcomes, it remains the question whether this relationship is linear. For example, in a study on child labor in Cambodia, it was found that children can work up to 22 hours per week without a negative effect on educational enrollment (Phoumin, 2008). In this study, hours worked is measured as total hours worked in both economic and non-economic activities, so it still remains possible that one form of child labor has a more negative effect on children's schooling than the other. Other researchers have made a distinction between the types of child labor. In a paper on educational success in Portugal (Goulart & Bedi, 2008), educational attainment is negatively influenced by commercial work; but not by domestic work. In another study on Ghanaian children, Heady (2003) studied the relationship between family business work and work outside the household and found that children's work negatively influences learning achievements. This holds for both types of work, but the effect for work outside the household is twice as high.

In this chapter, I will give an overview of the relationship between work hours and the engagement in school for children in Asia and Africa and discuss these findings. First, I will present bivariate relationships with work hours with whether a child is enrolled in school. Second, I will present similar tables with the average days children spend in school according to work hours. I will do this for boys and girls separately.

8.2 THE RELATIONSHIP BETWEEN WORK HOURS AND SCHOOL ENROLLMENT

In this section, I present bivariate relationships for work hours and school enrollment for girls and boys separately. Because school success probably also depends on how many days children spend in school, I will also give an overview of the relationship

between child labor and the average number of days per week children are in school. Because this second variable is (almost completely) missing for Somalia, Mauritania and Yemen, these countries are excluded in the second analysis. In order to make a clear comparison, I present figures for children in the lowest and highest category. Because doing some housework is normal, the lowest category for housework ranges from 0 to 5. For the other types of work I compare children who are not engaged with children working 26[1] hours and more per week. Because only the non-enrollment percentages are presented, row totals do not add up to 100 percent.

Tables 8.1 and 8.2 present the relationship with work hours and non- enrollment for children with the lowest compared to the highest workload. These tables are presented and described in separate sections for girls and boys. Some general conclusions can be drawn from Table 8.1 and 8.2. Firstly, on average, both girls and boys are more enrolled in school in Asia than in Africa. However, compared to the other countries in Asia, children in Bangladesh are substantially less enrolled in school. Secondly, the total averages (presented in the bottom row) suggest a negative relationship between the engagement in each type of work and school enrollment. Because these figures are averages, I willt elaborate on country difference more in the following sections.

8.2.1 THE RELATIONSHIP BETWEEN CHILD LABOR AND NON-ENROLLMENT FOR GIRLS

The overall average (not shown in Tables 8.1 and 8.2) school non-enrollment is 26.3 percent for African and 12.9 percent for Asian girls respectively. Compared to these averages, it does seem that girls who are engaged in housework for more than 26 hours per week are less enrolled in school. However, there are many differences across the continents and countries. In some African countries, there is no clear negative relationship. In Mauritania and Malawi, for instance, girls with the highest workload on housework are more enrolled in school than girls who are less engaged in housework.

Asia appears to be a continent of extremes. In Syria, girls with the highest workload are almost ten times less enrolled compared to girls who are not engaged in housework. In Vietnam, the differences between girls in the highest and lowest category are smaller; hence the average in Asia appears to be highly influenced by the high number of children not enrolled in Bangladesh and Syria.

With regards to family business work in Africa, we see similar patterns. African girls are less enrolled in school when they spend more time on family business work; and the difference is greater compared to girls engaged in housework. The situation in Somalia is most problematic; the great majority of Somali girls working more than 26 hours on family business are less enrolled in school. For Asia, the overall patterns are also similar to those on housework, with worrying situations for girls working in both types of hidden child labor in Syria and Bangladesh. Note that girls involved in family business work in Vietnam for more than 20 hours a week are also relatively often not enrolled in school.

Working many hours is even more problematic for girls involved in commercial work. Most girls who work 20 hours or more on commercial work are not enrolled in school. These figures suggest that the inflexible nature of commercial work makes this work the most difficult type to combine with school. Only in Malawi, girls seem to be able to combine work with school as their situation is relatively good compared to other countries. Unpaid work outside the household appears to be less problematic than working in commercial child labor. However, it must be noted that girls with the highest workload are often not enrolled in school. Whether this is a causal relationship is difficult to prove; it could very well be that these girls work because they are idle and have nothing else to do.

Table 8.1 Percentages girls not in school by country and work hours

	Housework		Family Business Work		Paid work		Unpaid work	
	0–5	26+	0	26+	0	26+	0	26+
Côte D'ivoire	36.1	63.6	34.3	63.4	41.3	70.6 *	41.3	66.7 *
Gambia	33.9	19.2 *	26.7	27.8 *	31.7	N/A	31.8	N/A
Ghana	21.5	28.9	19.3	39.5	21.9	N/A	21.8	N/A
Guinea Bissau	39.3	38.1	35.8	37.8	36.4	N/A	36.4	N/A
Sierra Leone	23.8	46.8	17.1	49.2	26.3	N/A	26.2	34.0 *
Togo	25.3	50.7	24.8	59.7	28.1	N/A	27.8	N/A
Mauritania	23.3	20.5	20.6	23.0 *	22.8	N/A	22.8	N/A
Burundi	22.0	39.3	22.2	N/A	22.0	75.0 *	22.0	N/A
CAR	43.7	46.2	40.3	48.0	43.9	63.6 *	44.2	32.8
Malawi	10.2	8.9	8.5	12.4	8.2	14.7 *	8.2	10.9 *
Somalia	60.8	49.6	43.0	65.8	48.6	63.3 *	48.7	62.1 *
Yemen	26.9	43.8	28.6	43.4	29.7	N/A	29.7	N/A
African Average	27.3	35.1	22.5	48.9	26.6	42.4	26.7	35.8
Syria	4.7	46.9	6.2	36.4 *	6.3	70.4 *	6.3	N/A
Thailand	1.3	N/A	1.4	N/A	1.1	N/A	1.1	N/A
Vietnam	5.3	13.9	4.6	42.5	6.0	63.2 *	6.0	N/A
Bangladesh	21.1	48.7	19.9	47.8 *	19.3	83.4	19.3	61.3 *
Asian Average	10.0	43.1	12.8	41.9	12.3	80.9	12.3	50.0
Total Average	19.0	36.4	17.2	48.4	19.8	64.1	19.9	38.3

* These averages are based on 20+ hours a week, because there were less than 25 cases in the 26+ category.

N/A= <10 cases to base an average on.

8.2.2 THE RELATIONSHIP BETWEEN CHILD LABOR AND NON-ENROLLMENT FOR BOYS

The average school non-enrollment for boys is with 22.0 percent in Africa and with 16.7 percent in Africa lower than for girls. However, the intra-country differences are similar to those for girls. The overall averages for African boys suggest that a higher involvement in housework might not hinder school enrollment. In some countries, such as Cote D'Ivoire, Gambia and Malawi, non-enrollment decreases as boys work more hours. On the other hand, there are also countries, such as Sierra Leone and Yemen where hard working boys are less engaged in school. In most Asian countries too, school enrollment of boys is also negatively associated with a high involvement in housework.

An assumption throughout this thesis is that certain parents in developing countries might consider work experience on family business work more valuable than formal

Table 8.2 Percentages boys not in school by country and work hours

	Housework		Family Business Work		Paid work		Unpaid work	
	0–5	26+	0	26+	0	26+	0	26+
Côte D'ivoire	29.2	43.9	22.0	51.3	29.9	54.8 *	29.9	35.1 *
Gambia	29.3	14.1 *	25.0	22.6	27.8	N/A	27.8	N/A
Ghana	25.2	27.1	18.9	38.8	23.8	40.7 *	24.0	N/A
Guinea Bissau	34.7	32.5	33.7	35.8	33.9	N/A	34.0	N/A
Sierra Leone	21.0	43.6	13.6	39.7	22.0	N/A	21.9	N/A
Togo	20.2	34.6	16.6	61.6	20.3	46.7 *	20.1	55.6 *
Mauritania	19.6	21.9	17.8	25.5	20.1	53.3 *	20.1	N/A
Burundi	21.3	32.3	21.0	27.3 *	20.2	76.7 *	20.2	N/A
CAR	32.1	31.0	29.3	38.9	30.3	44.4 *	30.5	28.8 *
Malawi	11.0	9.4	9.8	13.4	8.8	20.3 *	8.8	N/A
Somalia	33.4	43.5	24.2	55.0	32.4	N/A	32.4	50.0 *
Yemen	16.1	28.9	16.8	14.4 *	16.2	42.9 *	16.2	N/A
African Average	23.1	28.2	15.4	59.9	21.8	44.4	21.8	31.2
Syria	5.6	21.3 *	5.3	31.9 *	4.7	73.6 *	4.7	N/A
Thailand	1.2	N/A	1.2	N/A	1.1	N/A	1.1	N/A
Vietnam	4.1	6.0 *	3.3	10.7 *	3.6	N/A	3.6	N/A
Bangladesh	29.4	52.7	27.0	73.0	24.6	92.6 *	24.6	86.7
Asian Average	16.5	40.2	18.9	40.8	14.5	91.3	14.5	81.7
Total Average	19.6	29.3	17.0	44.3	18.2	79.9	18.3	52.1

* These averages are based on 20+ hours a week, because there were less than 25 cases in the 26+ category.

N/A= <10 cases to base an average on.

schooling. Boys with a high family business workload generally are less enrolled in school, indicating that this might be indeed the case for the boys in this study. The only exceptions are Gambia and Yemen; in these countries, boys who work many hours appear to be able to combine work hours with schooling.

Similar to girls, school enrollment of boys also seems to be more negatively influenced by commercial work compared to the other types of child labor. This is especially true for boys working more than 26 hours in Asia: In Syria, approximately three quarter of these boys are not enrolled in school and in Bangladesh this is, with more than 90 percent of the hardworking boys not enrolled in school, even more. For children in this age group, this is really a worrisome situation.

Regarding the relationship between unpaid work and school enrollment, we see that boys can combine it more often with school in Africa than in Asia. It must be noted that there are not many boys who are engaged in unpaid labor for more than 26 hours, which in itself means that this work might be not very detrimental.

Table 8.3 Average days in school for girls by work hours and country

	Housework		**Family Business Work**		**Paid work**		**Unpaid work**	
	0–5	**26+**	**0**	**26+**	**0**	**26+**	**0**	**26+**
Côte D'ivoire	2.6	1.5	2.7	1.5	2.4	1.2	2.4	1.5 *
Gambia	3.0	3.9	3.3	3.4	3.1	N/A	3.1	3.1 *
Ghana	1.0	0.5	1.1	0.2	0.9	0.0 *	1.0	0.3 *
Guinea Bissau	2.5	2.7	2.7	2.8	2.7	N/A	2.7	2.9 *
Sierra Leone	3.7	2.4	4.0	2.4	3.6	N/A	3.6	2.9 *
Togo	3.6	2.3	3.6	1.9	3.4	2.3 *	3.4	2.9 *
Burundi	3.7	2.7	3.7	1.3	3.7	0.8 *	3.7	N/A
CAR	2.4	2.2	2.5	2.2	2.3	1.8 *	2.3	2.6 *
Malawi	4.0	4.0	4.1	3.9	4.1	3.3	4.1	4.1
African Average	3.1	3.0	3.4	2.2	3.2	2.3	3.2	2.9
Syria	4.4	2.4	4.3	2.7	4.3	1.2 *	4.3	N/A
Thailand	4.6	4.3	4.6	4.3	4.6	3.0 *	4.6	4.3 *
Vietnam	4.4	3.6	4.4	2.1	4.3	0.9 *	4.3	N/A
Bangladesh	3.7	2.2	3.7	1.9	3.8	0.9 *	3.8	1.8 *
Asian Average	4.2	2.4	4.1	2.4	4.1	0.8	4.1	2.3
Total Average	3.7	2.9	3.8	2.2	3.7	1.4	3.7	2.8

* These averages are based on 20+ hours a week, because there were less than 25 cases in the 26+ category.

N/A= <10 cases to base an average on.

8.2.3 THE RELATIONSHIP BETWEEN CHILD LABOR AND AVERAGE DAYS IN SCHOOL FOR GIRLS

Tables 8.3 and 8.4 present the relationship with work hours and the average time involvement in school for children with the lowest compared to the highest workload. For children who are not enrolled in school, this variable is recoded into zero days in school. Officially enrolled children sometimes did not go to school in the previous week for various reasons (illness, school holiday, or work). In this study, this group accounts for approximately 4 percent of the children.

Table 8.3 shows that there are many differences in the average time involvement in school for girls. Girls in Asia spend around one day more in school per week than African girls. In Asia, the average time involvement of children who are (hardly) not engaged in child labor, can, with 4 days a week, be compared to school weeks in many western countries. Although the average engagement in Africa is lower, one country really stands out. In Ghana, girls only spend one day (or less) in school. This low average cannot be entirely attributed to low school enrollment figures. In Guinea Bissau, for instance, many

Table 8.4 Average days in school for boys by work hours and country

	Housework		Family Business Work		Paid work		Unpaid work	
	0–5	**26+**	**0**	**26+**	**0**	**26+**	**0**	**26+**
Côte D'ivoire	2.9	2.4	3.2	2.0	2.9	2.1	2.9	2.9
Gambia	3.2	3.7	3.4	3.6	3.3	N/A	3.3	3.2 *
Ghana	0.9	0.5	1.2	0.2	0.9	0.5 *	0.9	0.0
Guinea Bissau	2.7	2.9	2.8	2.8	2.8	3.3 *	2.8	N/A
Sierra Leone	3.8	2.6	4.2	2.9	3.8	N/A	3.8	3.1 *
Togo	3.7	2.9	3.9	1.7	3.8	2.2 *	3.8	1.8 *
Burundi	3.7	3.2	3.7	3.0	3.7	1.2 *	3.7	N/A
CAR	2.9	2.8	3.0	2.7	2.9	2.7 *	2.9	2.6 *
Malawi	3.9	4.0	4.0	3.8	4.0	3.1	4.0	4.1
African Average	3.2	3.2	3.	2.3	3.4	2.2	3.4	2.8
Syria	4.4	2.5	4.4	2.9	4.4	1.2	4.4	1.8 *
Thailand	4.6	4.5	4.6	4.0	4.6	3.0 *	4.6	N/A
Vietnam	4.4	3.7	4.4	3.9	4.4	2.0 *	4.4	N/A
Bangladesh	3.3	2.0	3.4	1.1	3.5	0.3	3.5	0.6
Asian Average	3.9	2.5	3.9	1.7	4.0	0.4	4.0	0.8
Total Average	3.6	3.1	3.8	2.2	3.7	0.7	3.7	1.9

* These averages are based on 20+ hours a week, because there were less than 25 cases in the 26+ category.

N/A= <10 cases to base an average on.

girls are not enrolled in school, but the average days spent in school are comparable to many other African countries.

In both continents, the difference in the engagement between non-working girls and the hardest working group is around one day as well. There are a few exceptions to this finding. First, being involved in housework in Africa does not seem to influence the time involvement in school to a large extent. Second, the difference between the group with the lowest and the highest workload is larger for commercial work. For example, Asian girls engaged in commercial work for more than 26 hours a week are in school for one day a week only compared to 4 days for nonworking girls. Interestingly, the involvement in unpaid work does not seem to influence the time spent in school in Africa, but for Asian girls this difference is much larger. In Africa, girls are probably more able to combine school with unpaid labor.

8.2.4 THE RELATIONSHIP BETWEEN CHILD LABOR AND AVERAGE DAYS IN SCHOOL FOR BOYS

The results of Table 8.4 reinforce some of the earlier findings. The figures in this table show that African boys are able to combine housework with school. In Asia, especially in Syria and Bangladesh, the difference for children with the lowest and the highest workload is more substantial.

In some countries in Africa, such as Gambia and Guinea Bissau, there is no clear negative relationship between a high workload on family business work and the time spent in school. On the other hand, in countries such as Sierra Leone and Togo, hard-working boys are less able to combine work with school. In most countries in Asia, these differences are smaller. However, the situation in Bangladesh deserves special attention.

It will not come as a surprise that commercial work by boys is also related to a lower average time involvement in school. The largest differences are found in Asia. Especially in Syria and Bangladesh, boys who spend much time on commercial work are not able to spend much of their remaining time in school. This indicates that, although the average involvement in commercial child labor is not very high (compare Chapter 5), they do seem to suffer most.

Interestingly, the involvement in unpaid work seems to influence Asian boys more than African boys. Unfortunately the nature of the data does not allow us to tell what they are doing. It could be that these boys work as apprentices. In this way, these boys are officially enrolled but spend relatively fewer days in school. However, it must be noted that the number on which this average is based is relatively small.

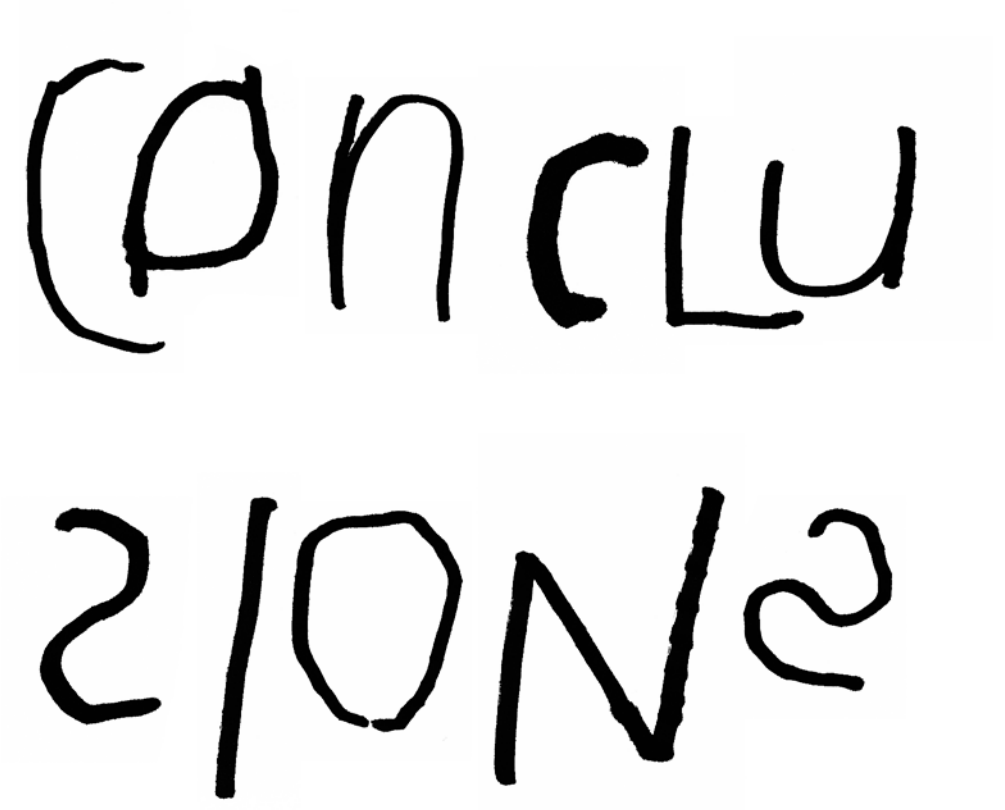
To conclude, there appears to be a negative relationship between work hours and school enrollment. This association is weakest for housework and strongest for commercial work: both girls and boys often seem to be unable to combine school with commercial labor. This does not mean that other types of work should be neglected. For every kind of work, we see that children working many hours spend fewer days in

school. The only exception seems to be housework in Africa, but we should not disregard the fact that in many African countries, many girls with a high workload on housework are not even enrolled in school at all.

NOTES

[1] If there are less than 25 cases in each cell (not-enrolled and enrolled) I compared the lowest category with children working 20 hours or more. If there are less than 10 cases in this category, there is no average shown.

Chapter 9



9.1 INTRODUCTION

Child labor is still a wide-spread phenomenon in developing countries; many children under the age of 14 spend much time on work which may possibly hamper their health and education. Child labor has many faces: children may be involved in visible kinds of child labor in factories or sweatshops, but also be engaged in more 'invisible' kinds of child labor in their own family sphere or community. To account for the different faces of child labor, I have tried to find answers to questions about the engagement of children in developing countries in commercial work, housework, family business work and unpaid work outside the household; all activities that can be grouped under the broad umbrella of child labor.

In this thesis, I thus distinguished four types of child labor:

- **Commercial work**: is paid (either in cash or kind) work for someone who is not a member of the household in which the child lives.
- **Housework**: is work done within the household and consists of chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children.
- **Family business work**: is work done for members of the household, but housework is excluded. It includes 'any other family work', for example on the farm or in a business or selling goods in the street.
- **Unpaid work outside the household**: This category encompasses all unpaid work for someone who is not a member of the household in which the child lives.

Parents base the decision to let their children engage in child labor on characteristics of their children, their household and the context they live in. The driving factors behind the different forms of child labor may partly overlap, but there are also many differences. For example, children living in households without access to running water might be responsible for water fetching and therefore spend a substantial amount of time on housework. However, access to running water cannot explain why children are engaged in work for pay outside their household. In order to address this variation and to explain the engagement in the four types of child labor, I have developed a universal model in which the driving factors of child labor are grouped into to three conditions. This model can be adjusted according to the research question and kind of child labor studied.

Besides researching the factors influencing the decision of parents to let their children engage in child labor, I also wanted to account for the gender differences in (child) labor engagement found in many developing countries. Given the fact that there are many differences between rural and urban areas and Asia and Africa, I also looked into the differences between these two areas and continents.

In the analyses in this thesis I included characteristics of the children and of the household in which they live (like age, sex, occupation and education of the parents, wealth, and household composition) as well as characteristics of the context (like edu-

cational facilities, labor market structure, level of development, culture, etc.). Context factors may not only directly influence child labor, but also moderate the effect of household characteristics. These interaction effects are empirically studied by analyzing the differences between rural and urban areas. To account for the differences between Asia and Africa, I performed separate analyses for these continents.

To determine the factors that influence children's engagement in child labor, I used data for 18 countries from the Demographic and Health Surveys (DHS) and data for 16 countries from the Multiple Indicator Cluster Surveys (MICS). I used the DHS data for the analyses on the engagement in commercial work. For the empirical analysis on the hours spent on the different types of child labor, I used data from MICS, collected under the supervision of UNICEF. The district context information (e.g. culture, development, labor market structure, etc.) was created by aggregating variables from these surveys to the sub-national level. The household and context data of the countries in this study are part of the Database Developing World (DDW, www.datdevworld.org).

9.2 RESEARCH QUESTIONS

The research questions I tried to get an answer to are:

1. How high is the incidence of the different forms of child labor in developing countries? How many hours do working children spend on commercial work, housework, family business work and unpaid work for others outside their household?

2. A: What is the effect of characteristics of the household in which a child lives on the engagement in child labor?
   B: What is the effect of context characteristics on the engagement in child labor?

3. To what extent do effects of household and context characteristics on the engagement in child labor differ between boys and girls in developing countries?

4. To what extent do effects of household and context characteristics on the engagement in child labor differ between rural and urban areas?

5. To what extent do effects of household and context characteristics on the engagement in child labor differ between Asia and Africa?

9.3 RESULTS

9.3.1 RESEARCH QUESTION 1: THE SIZE OF THE PROBLEM

That child labor may be problematic can probably best be illustrated by the high engagement of children in the four types of work. In Chapter 3, I showed that in some African

countries, almost 50 percent of the children are engaged in commercial work. In Latin America countries and India, these levels are lower, but even in these countries, many boys and girls under the age of 14 are engaged in some kind of economic activity. This is, however, only part of the story; not only is it important whether children work, but it matters very much how much time children are involved in the different types of labor. To make the picture more complete, I focused on time involvement in the rest of the thesis. Using data of a sample of 4 Asian and 12 African countries from the Multiple Indicator Cluster Surveys (MICS), I could give a description of the hours children spend on commercial, household and family business work and unpaid work for others. These results are summarized in Chapter 4.

I showed in section 4.2 that the average involvement in commercial child labor for African and Asian children is less than 10 percent. Compared to the averages in Chapter 3, this number is relatively low, but the children that are involved in it tend to do so for many hours per week. For example, in Somalia and Bangladesh, the average hours worked by children in commercial child labor is around 40 hours; equivalent to an adult work week in many developed countries.

In section 4.3, the descriptive statistics reveal that 22 percent of the African girls are engaged in housework for more than 16 hours per week. That is a considerable workload. I also showed that boys tend to work more hours on family business work than girls. On the other hand, the total hours girls spend on work within the family (housework and family business work) combined is with 12 hours per week 2 hours more than the average engagement (10 hr.) for boys; hence girls work more on these 'hidden' forms of child labor.

Lastly, in section 4.4, I showed that, especially in Africa, many children work without pay for others outside their household. Around 10 percent of African boys and girls are engaged in this kind of work. The average involvement according to gender and urbanization in unpaid work ranges from 5 to 25 hours per week. A weekly workload of 5 hours is probably not problematic, but we must keep in mind that these children may also perform other activities in a week so that these extra hours might be the straw that breaks the camel's back.

9.3.2 RESEARCH QUESTION 2: EFFECTS OF RESOURCE, STRUCTURAL AND CULTURAL HOUSEHOLD AND CONTEXT FACTORS

The effects of the resource, structural and cultural household and context factors are summarized in Table 9.1 (commercial) and 9.2 (all types of unpaid work) respectively.

RESOURCE FACTORS AT THE HOUSEHOLD LEVEL

In general, the results of this thesis confirm that children living in families with more access to resources are less engaged in child labor. The effect of parental education does not always point into the same direction. For example, we see that children with higher educated parents are less engaged in commercial child labor. On the other

hand, children with fathers with higher educational levels work more in the household and African children with better educated mothers are more engaged in unpaid work. The unexpected effect of father's education might be explained by the fact that father's occupation is missing in the MICS- data. Unfortunately, I do not know whether fathers with a (relatively) good education are involved in a job outside the household which may generate a higher demand for housework.

The effect of wealth is in line with most child labor research and confirms that wealthier children are less engaged in child labor. The only exceptions to this finding are the effects of wealth on paid work in urban areas in Chapter 3 and the nonlinear effect of wealth on unpaid work in Africa in Chapter 6. The nonlinear effect of wealth for unpaid work in Chapter 6 indicates that up to a certain point, children from wealthier households work more. After that point, I found the expected decline in work hours. This finding might reflect that poorer households are excluded from the mutually interdependent help system with their neighbors because they do not own a farm or business.
Access to basic services, such as the availability of electricity or tap water, leads to more efficiency and reduce the time involvement of children on housework. On the other hand, assets such as the presence of livestock or land for agricultural production go hand in hand with an increase in work hours. A closely related household factor is parental agricultural occupation, as indicated by the proportion of households owning both agricultural land and livestock. In Chapter 7, I showed that this is an important factor to explain the involvement in unpaid labor in Africa.

RESOURCE FACTORS AT THE CONTEXT LEVEL

Regarding resource factors at the context level, the district level of development only has an effect on the engagement in child labor in rural areas. However, the district level of education, which is also placed under structural factors, is found to be highly influential. This result indicates that, when surrounded by educated adults, parents see that education contributes to human capital formation and better labor market opportunities and experience that it is within reach for their children.

STRUCTURAL FACTORS AT THE HOUSEHOLD LEVEL

Structural factors at the household level affect child labor in several ways. As children grow older, they are physically more able to do more and they spend more time on commercial work, housework, family business work and unpaid work for others.

Other structural characteristics influence the way resources and tasks are distributed among family members. In households with a missing parent, for example, children seem to take over the role of their father or mother and are more engaged in child labor. An exception is the structure of living in an extended family; more adult household members give children the opportunity to get better access to resources and allow them to spend less time on child labor. Interestingly, children with more brothers or sisters mostly are more engaged in child labor. This might reflect two phenomena. First, the

Table 9.1 Overview of the results found in this thesis for commercial work

	Chapter 3 Commercial work		Chapter 5 Commercial work Hours Asia		Chapter 5 Commercial work Hours Africa	
	Girls	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**
Resource factors						
Household level						
Occupation father	+/-	-				
Mother employed	+	+				
Education father	-	-	-	-	-	-
Education mother	-[1]	-[1]	-	-	-	-
Household wealth	+[1]/-[2]	+[1]/-[2]	-	-	-	-
Context level						
District development index	-[2]					
Structural factors						
Household level						
Age	+	+	-/+	-/+	+	+
Mother missing	+	+	+	+		
Father missing	+		+	+	+	+
Extended family without grandparents			-	-		
Extended family with grandparents			-	-		
Biological child						
Birth order child	-/+	-/+		-		
Number of sisters	+	+	+	+		
Number of brothers	+	+		+		
Number of young children in the household				-		
Context level						
Living in rural area	+	+	-	-		
Mean years of male education						
Mean years of adult education				-		
Labour market structure (% unskilled manual jobs)	+[2]	+[2]				
Cultural factors						
Household level						
Traditionality (mother 1st child < 18)						
Empowerment (age diff. parents)						

Table 9.1 Continued

Context level					
Traditionality (Mean age difference between spouses)		-	+	-	-
Patriarchy (% hh with grandparents father's side)	+[1]	+[1]			

[1] effect is only significant in urban areas

[2] effect is only significant in rural areas

Note: A grey cell indicates that the factor was included in the analysis

presence of more children might be a reason for households to start a family businesses or farm. Second, it might reflect a culture with high fertility and high involvement in low-skilled manual labor.

STRUCTURAL FACTORS AT THE CONTEXT LEVEL

Regarding structural factors at the context level, it is urbanization which has the most pronounced effect. Children living in rural areas are more engaged in commercial work, housework and family business work. These results imply that the demand for child labor is higher in rural areas and that it may consist mainly of agricultural activities. Although the results of Chapter 3 indicate that the likelihood increases that children are engaged in commercial child labor in rural areas, children in urban areas engaged in commercial work have longer work hours (Chapter 5). In Asia, the involvement in unpaid labor is mostly an urban phenomenon.

In Chapter 3, I showed that a higher proportion of unskilled laborers in a district is related to more involvement in commercial child labor. This finding supports the assumption that child labor often is low-skilled manual work. It is difficult to say whether commercial child labor is a substitution of adult labor; it could very well mean that a higher demand for unskilled labor means that adults and children work side by side in the same industries.

It is often argued that a lack of school facilities may cause a higher child labor supply. In my research, school facilities are reflected by the educational level of the community. In many of the analyses, I found that children in a higher educated district are less engaged in child labor. These results suggest that improving educational facilities, indeed, may reduce child labor engagement.

CULTURAL FACTORS AT THE HOUSEHOLD LEVEL

Cultural factors at the household level, such as whether the mother married young

Table 9.2 Overview of the results found in this thesis for unpaid work

	Chapter 6 Housework Asia	
	Girls	**Boys**
Resource factors		
Household level		
Education father	+/-	+/-
Education mother	-	-
Household wealth	-	-
Household has own land		
Household has cattle		
Household has tap water	-	-
Household has electricity	-	
Household has land and livestock		
Context level		
District development index		
National GDP per capita		
Structural factors		
Household level		
Age	+	+
Mother missing	+	
Father missing	+	+
Extended family without grandparents	-	-
Extended family with grandparents	-	-
Biological child		
Birth order child	-	-
Number of sisters		+
Number of brothers	+	+
Number of young children in the household	+	
Context level		
Living in rural area	+	+
Mean years of adult education	-	-
Cultural factors		
Context level		
Traditionality (Mean age difference between spouses)		-
Patriarchy (% hh with grandparents father's side)		+

Note: A grey cell indicates that the factor was included in the analysis

	Chapter 6 Housework		Chapter 6 Family Business work Asia		Chapter 6 Family Business work Africa		Chapter 7 Unpaid Work Asia		Chapter 7 Unpaid Work Africa	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
	+	+		_	+	+	-	-		
			-	-	-	-		-	+	+
	-	-			-	-	-	-	+/-	+/-
	+	+			+	+				
	+	+			+	+				
	-	-		-						
	-	-		-		-		-	-	
									+	+
	+/-	+/-	-/+	+	+/-	+/-		+	+	+
	+	+								
				+				-		
	-	-		-	-	-			-/+	-/+
	+	+	+	+						
	+		+	+	+	+				
			+	+	+	+		-		
	-	-			-	-		-		
			-					+		
	-	-			-	-				

and the age difference between parents, do not have any effect on the engagement in commercial child labor. Moreover, concepts such as empowerment are also captured through the educational level and labor market participation of women. These factors have been found to influence child labor in many of the analyses in this study. Women's education decreases the likelihood and number of hours spent on child labor. In my opinion, women's educational level is the best household indicator for the position of women and empowerment. Mother's employment differently affects child labor: I found that children with working mothers sometimes are more engaged in child labor. This might indicate that children go along their mothers to the workplace. In the analyses in Chapter 5 to 7, I have not controlled for cultural values at the household level.

CULTURAL FACTORS AT THE CONTEXT LEVEL

The cultural context, and especially patriarchy, plays an important role in explaining child labor. Children living in patriarchal districts are more often engaged in child labor. This could reflect a patriarchal culture in which children are expected to learn by doing as a preparation for their future professions. In addition, patriarchy is in Asia associated with more housework for boys. In Africa, both girls and boys living in patriarchal areas are less involved in housework and family business work. This might reflect the different prevailing patriarchal kinship systems in Africa and Asia. In Africa, women living in patriarchal environments have more autonomy than in Asia (Kandiyoty, 1988), which enables them to improve the welfare and living situations of their children.

9.3.3 RESEARCH QUESTION 3: DIFFERENCES IN THE BACKGROUND CHARACTERISTICS BETWEEN GIRLS AND BOYS

Regarding the differences between girls and boys, I showed that boys spend relatively more hours on commercial work outside the household and girls tend to spend more time on housework. With respect to family business work and unpaid work outside the household, gender differences are smaller. Boys are somewhat more engaged in family business work and in unpaid work outside their household; but especially in Africa, girls are about equally engaged in these kinds of work. In Asia, the role of women and girls is clearly more centered in the domestic sphere.

When effects of background characteristics differ between boys and girls, it is mostly the strength of the effect that differs. Table 9.1 and 9.2 show that the effects of resource factors are mostly the same for boys and girls. However, some effects are only significant for either boys or girls. For example, the availability of tap water and electricity decreases the involvement of boys in family business work and unpaid work in Asia, indicating that these types of work are gender-specific.

Turning to the structural factors, I found only a small number of differences in the background characteristics between girls and boys. However, there are a few factors that are significant only for either girls or boys. For example, in extended families with-

out grandparents, boys are less involved in family business work, probably indicating a preference for male adult workers in family business work.

The cultural factors patriarchy and traditionality seem to explain some of the gender differences in child labor engagement. Boys, for instance, spend more hours on commercial work in traditional areas. On the other hand, Asian girls living in more traditional areas are less engaged in family business work. These results reinforce the notions that the place of Asian women is more in the household and boys in more traditional areas are expected to take over the family business.

9.3.4 RESEARCH QUESTION 4: DIFFERENCES IN THE BACKGROUND CHARACTERISTICS BETWEEN RURAL AND URBAN AREAS

For the chance to be engaged in commercial child labor, I tested whether coefficients are significantly different between rural and urban areas. For the analyses on hours spent on paid and unpaid labor I presented average effects, and interaction effects are added to the model when they are significantly higher or lower in rural areas. In summary Table 9.1, I added footnotes to indicate whether an effect only is significant for urban or rural areas (Chapter 3) and I will summarize the differences between rural and urban areas in for hours spent on commercial work (Chapter 5) and unpaid child labor (Chapter 7) in different sections.

DIFFERENCES IN THE BACKGROUND CHARACTERISTICS FOR THE ENGAGEMENT IN COMMERCIAL WORK BETWEEN RURAL AND URBAN AREAS

With respect to the engagement in commercial work, I showed that there are fascinating differences in the effects of mother's education and household wealth between rural and urban areas. In urban areas, children with higher educated mothers are less engaged in commercial child labor, but the likelihood of being engaged in commercial child labor is higher for children with a working mother in rural areas. These results indicate that children living in rural areas cannot profit from their mother's resources and perhaps work side by side their mothers at the workplace.

A second contradictory effect is the effect of wealth. Children living in wealthier families are less involved in commercial child labor in rural areas, but more involved in commercial child labor in urban areas. This must mean that demand factors in urban areas pulls these relatively richer children into the labor market. It must be noted that this effect has been found not to be robust (see the robustness test in Appendix A) and that the demand for child labor in urban and rural areas is probably country-specific.

Regarding the effects of context factors on the engagement in commercial child labor, there are many differences between rural and urban areas. These differences suggest that the demand for commercial child labor affects different groups differently. Moreover, the results suggest that the role of patriarchy may be context-specific. For example, the labor market structure, measured by the proportion of unskilled male

laborers, only affects the labor engagement of children in rural areas. In urban areas, a higher demand for unskilled laborers (mostly) has no effect on commercial child labor. The context-specific nature of patriarchy is reflected through the significant increase in child labor in urban patriarchal areas. Finally, the only group that is affected by the district level of development is (rural) girls: a group we might least expect. Whatever the reason (successful policies, lower demand for girl child laborers) for this unexpected effect may be; it tells us that zooming in on specific groups and regions is most important.

DIFFERENCES IN THE BACKGROUND CHARACTERISTICS FOR HOURS SPENT ON COMMERCIAL WORK BETWEEN RURAL AND URBAN AREAS

With respect to differences in the background characteristics between rural and urban areas, I found more significant interactions with urbanization in Asia than in Africa. For instance, the child labor decreasing effects of parental education are less pronounced in rural areas in Asia. This implies that higher educated parents in urban areas are more able to free their children from child labor.

On the other hand, we see that missing a father is less problematic in rural areas. In my view, this could mean that children in these families receive more community help. Interestingly, the child labor increasing effect of living in a household without the mother is reinforced in rural areas, which indicates that single fathers might be more willing to let their children engage in commercial work than single mothers. Lastly, the differences in the engagement between boys and girls in traditional Asia are even stronger in rural areas.

In Africa, there are only two significant interaction effects with urbanization. In rural areas, older children have more responsibilities than children of the same age in urban areas. Children living in wealthier families work fewer hours in commercial child labor, but this effect is smaller in rural areas, supporting the situational dominance hypothesis which argues that when there are fewer possibilities, the situation dominates.

DIFFERENCES IN THE BACKGROUND CHARACTERISTICS FOR HOURS SPENT ON UNPAID WORK BETWEEN RURAL AND URBAN AREAS

In Chapter 7, I argued that unpaid children's work may have a different nature in Asia and Africa. These differences are also reflected in the interaction effects with the background characteristics between rural and urban areas. For example, in rural Asia; boys work more hours when their household has access to electricity; indicating that access to electricity could lead to more productive small businesses. Note that improving the access to basic services could result in this unintended side-effect.

The agricultural character of unpaid work in Africa is reinforced by the many significant interaction effects with living in a rural area in Africa. I showed that children in rural areas in Africa with access to running water are less engaged in unpaid work for others, probably consisting of water fetching and tasks related to irrigation. Lastly,

children living in rural households without their father in Africa are more involved in unpaid labor. Single parent families might receive community help in return to the unpaid help of their children.

SITUATIONAL DOMINANCE VS. DOMINANCE OF RESOURCES?

According to the situational dominance hypothesis, in areas with fewer possibilities, resources matter less. This would mean that in rural areas, effects of resource factors would be smaller. The other scenario would be that parents with a higher socio-economic background will find ways to educate their children and free them of child labor even if they live under harder circumstances in rural areas. According to this hypothesis, we would expect a larger child labor reducing effect of parental education and wealth in rural areas.

The results of this thesis do not point into the direction of either one of these hypotheses. Sometimes, the situation seems to dominate, and sometimes the effect of the resources. However, this seems to be caused by the fact that it is not really clear what 'possibilities' and 'harder circumstances' mean. Consequently, if one interprets a possibility as a chance to go to school, then there generally are fewer possibilities in rural areas. On the other hand, a 'possibility' could also be translated as a way to earn money to contribute to the family income. In that sense, there might be more possibilities in rural areas. Hence, simply stating that a situation is more positive or more negative is a too simplified model of reality; and further theorizing on child labor should take that into account.

9.3.5 RESEARCH QUESTION 5: DIFFERENCES IN THE BACKGROUND CHARACTERISTICS BETWEEN ASIA AND AFRICA

Regarding the differences in the background characteristics between Asia and Africa, the most important result that catches the eye in Tables 9.1 and 9.2 is that, except for unpaid (both within the household and for others) work, many background characteristics do affect child labor in Asia but they do not in Africa. This is most pronounced for hours spent on commercial work. In Africa, the engagement in commercial work is primarily influenced by socio-economic factors[1].These results indicate that wealth is the most important driving factor, and that structural and cultural factors only become influential in more developed regions, as is the case in Asia.

With respect to housework and family business work, Asia and Africa differ most in the direction of the effects of patriarchy. They tell us, that although the statistical instrument is the same, it measures two different kinship systems. These results reinforce earlier findings from ethnographic research (Kandiyoti, 1988) that African women have more autonomy in patriarchal communities.

From the findings in Chapter 7, I conclude that in Africa unpaid work probably mostly is done at neighboring family farms and businesses. If families help each other, they also can ask for help in return when they need the help in harsher times. In Africa,

children living in the poorest families, who lack the resources for setting up a farm or business, are less engaged in unpaid labor than somewhat richer children. As a result, their children cannot profit from these social safety nets and are at risk to stay poor in adult life.

9.4 POLICY RECOMMENDATIONS

In Chapter 8, I showed that there is a negative association between children's work and school enrollment. In light of these facts and initiatives such as the Millennium Development Goals program, child labor has been on the agenda of many governments and organizations. So what can policy makers do reduce child labor and get these children into school?

Based on the literature on child labor, I would say that one can divide child labor policy into two kinds: (1) policy aimed at reaching children and caretakers in order to decrease the child labor supply; (2) policy designed to lower the demand for child labor through laws aimed at changing firm policies or international trade agreements. Another distinction can be made in stimulative and restrictive policy; or in other words positive and negative inceptions. Similar to the child labor model in this thesis, policies are not restricted to one level, but there may be policies at the local, national and international level. Figure 9.1 presents an overview of policies aimed at reducing child labor. This overview is by far not complete but it is meant to illustrate the different types of policies and their target groups.

Figure 9.1 clearly shows that there a two sides of the coin. A policy might be good in reducing the labor supply, but if there is still a large demand for child labor, children might be still pulled into the labor market. The fact that effective law enforcement is mentioned twice at the local level does not mean that is it is most important; however, it does illustrate that an abolitionist approach and bans miss their purpose without effective law enforcement at the local level (Orkin, 2010; Fors, 2012).

I am not offering a simple solution to a complex problem. To account for the different faces of child labor, policy makers should take into account that there might be different solutions for different parts of the world. Besides that, they should take into account that a policy might have counter-intuitive (Basu, 2004) or unintentional effects and that situation-specific knowledge about the local context is very important.

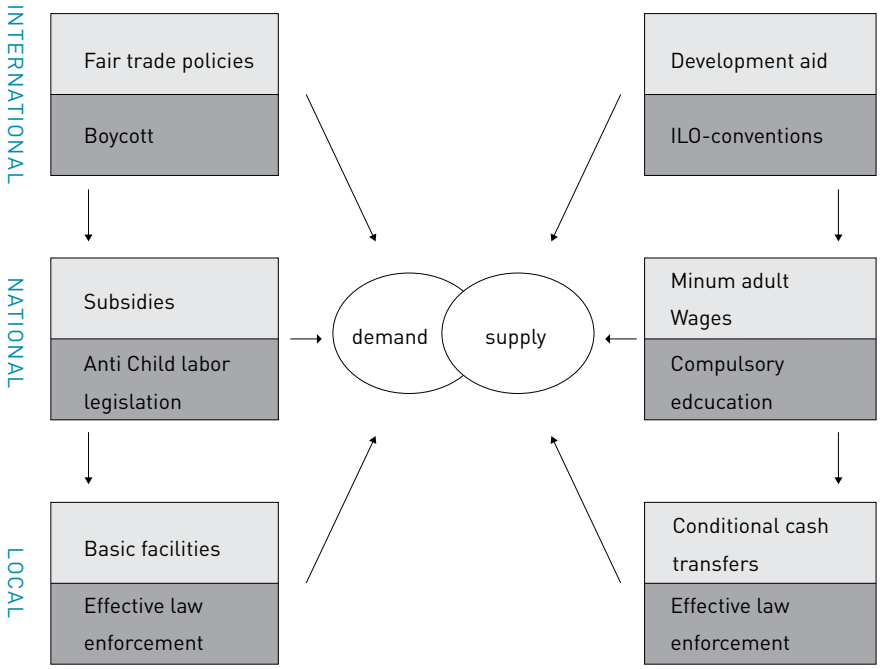
Having said that; research such as my thesis can help policy makers decide on to what to concentrate first. A good way to start would be to focus on the robust results. The consistent outcomes of my research can be summarized as follows:

- Wealth reduces child labor
- Higher education of the parents reduces child labor
- Access to basic services reduces child labor
- Older children work more
- Children with a missing parent work more

- Children with more brothers and sisters work more
- Children living in extended family are less involved in many kinds of work
- Better educational infrastructure reduces children's involvement in many kinds of work

Any child labor policy should focus on the main reasons of child labor, but in order to be fully successful, it must take the exceptions into account. For example, raising income and wealth by investing in education might be a good way to start. Moreover, higher female education is also associated with lower fertility rates, which may also reduce child labor. Furthermore, a higher educational level may lead to a higher level of development, better educational infrastructures and more access to basic services. More access to basic services reduces time spent on housework and family business work. However, the results on unpaid work in Chapter 7 show that this could lead to an unintended side- effect. In rural areas in Asia, access to basic services is associated with a higher engagement in unpaid work by boys. This might be apprenticeship work, which may be beneficial to their career, but if this work is not monitored well, these boys are at risk to be exploited.

Figure 9.1 Overview of policies designed to reduce child labor



Note: The light grey boxes above refer to positive inceptions; and the darker grey boxes refer to negative inceptions.

The most consistent result at the context level is that of the district's educational level; if found to be significant, it always reduces child labor engagement. I therefore consider investing in the educational infrastructure to be one of the most powerful means to eradicate child labor. However, one should not neglect culture. Addressing the differences in cultural patterns such as patriarchy and traditionality is one of the challenges of child labor policy. Interestingly, the results in this thesis suggest that traditionality and patriarchal structures, to some extent, may reduce child labor engagement. Within the household economy of patriarchal families, co-residing family members often seem to lighten the workload of children. At the context level, we see similar phenomena. Because children living in a household with one of their parents missing often are found to be more engaged in child labor, extended family households might be more able to cope with the many uncertainties of daily life. A shift to a more modern society with modern family types could therefore mean a (temporary) increase in child labor. As many authors stress the role of credit constraints and uncertainties (Cigno, 2011; Fors, 2012; Edmonds & Pavcnik, 2005); local support to nuclear or single parent families might be one of the top priorities of governments and donor organizations.

The results in this thesis may not be very encouraging, but there are examples of successful policy, such as the conditional cash transfer system (Bolsa Escola) in Brazil. The developments in Brazil show that an integrative approach to child labor could help to develop several policy measures to raise educational attainment, reduce child labor and to improve living standards and the access to basic services. Together this may lead to a situation in which both the child labor demand and the supply is at a minimum, which could really end the exploitative use of children's hands (UCW, 2011).

9.5 DISCUSSION

This thesis has made several theoretical and empirical contributions to the child labor literature. A first empirical contribution is the overview of the incidence of child labor in developing countries. As I could use data with very specific information on the time involvement of children in 16 countries in Asia and Africa, I was able to make an overview of the time children spend on all the forms of child labor. These data allowed me to make the first accurate portrayal of the extent of hidden child labor (namely housework and family business work) within households. In addition, it also sheds more light on unpaid work done by children as apprentices or neighboring help.

An important theoretical contribution is the new theoretical framework on child labor. This model distinguishes three levels (household, district and nation) and three groups of explanatory variables: resources, structure and culture. Each of the three groups refers to another strand of the literature; economics, sociology and anthropology. The model was subsequently tested using multilevel analyses on four forms of child labor: commercial work, housework, family business work and unpaid work for others. The multilevel approach allowed me to simultaneously investigate effects of household and context factors. In addition, I could test whether the effects of background effects

were different under the different circumstances in rural and urban areas and in Asia and Africa. As these analyses not only shed more light into the factors influencing all types of child labor, but also revealed many differences, the analyses can be considered as the second very important empirical contribution to the child labor literature. It makes the many hours of work worth it.

Although my research has reached most of it aims, I am still aware of its limitations and shortcomings. I would like to mention a few and give suggestions for further research. As I explained earlier, I have been able to show significant and robust relationships for different child labor outcomes. Critics may say that, using income as an independent variable and child labor as an outcome variable, reverse causality and endogeniety problems may arise. However, I use a wealth index which is aggregated for several household assets as a proxy for the household's economic situation and income. This has the advantage that, since the acquisition of goods such as a television and a house made of firm material goes further back in time, the classical endogeneity problem is less likely to occur. Besides, as I found robust relationships between wealth and other resource factors, the findings in this thesis are in itself interesting for the scientific community and policy makers.

In addition to that, I use household survey data from two sources: DHS and MICS. Both sources have their advantages and drawbacks. A major disadvantage of the MICS for scientific research is that these surveys do not include information about parental occupation. Since parental occupation often is one of the key identifiers of children's school enrollment or labor market engagement (both for present and future jobs) in stratification research, I would like to have been able to control for this factor. The value of this variable in explaining child labor decisions probably is best illustrated by the results of Chapter 3. In this chapter, I used DHS-data in which parental occupation is available and I showed that children with fathers who work in an upper non-farm profession are less engaged in commercial child labor. I believe that if parental occupation were available in the MICS-data, much of the unexpected results of fathers' education would disappear. Further, although I have shown which factors are of importance in determining unpaid child labor, I could only guess whether children worked as apprentices or helped at neighboring farms. Hence, more detailed questions on the nature of unpaid work for others outside the household would lead to a better understanding of the these unpaid activities. To overcome these data constraints, I would advise organizations such as MICS and DHS to add a couple of questions about parental occupation and the nature of children's unpaid work outside the household in their survey questionnaires. It must be noted, however, that both MICS and DHS have made tremendous progress by harmonizing the child labor modules in the most recent years and I would like to compliment both organizations on this.

This thesis contains two analyses on the engagement in commercial work. Three countries (Sierra Leone, Malawi and Bangladesh) are included in both analyses. For these countries, the incidence in commercial child labor differs between these two data

sources. For Malawi and Bangladesh, the average engagement is, with a 3 to 5 percent difference, only somewhat higher than the average in MICS. The difference for Sierra Leone is, with approximately 20 percent, more substantial. As the survey from DHS is from 2008 and the MICS from 2005, this difference might be explained by the different time points. Because both sources are respectable representative household surveys, it remains still difficult to say whether one of the two sources suffers from a selection bias. However, because the MICS child labor modules contain detailed questions on the number of hours children work; I chose to use this data source for the bulk of my analyses.

I have high quality data for the household characteristics, but when it comes to the characteristics of the context, there is room for improvement. I have aggregated proxy variables for the indicators of the resource, structural and cultural variables. At the district level, information is hard to find for, among others, the actual demand for child labor. One suggestion for future research would be identifying and collecting data about labor intensive industries, such as diamond and gold mining, and crops, such as cotton and cacao, all known for their widespread involvement of children.

Because I use household surveys, this thesis could not include the worst forms of child labor, such as child prostitution, bonded child labor, and child soldiers. Moreover, children living in the streets or orphanages are generally not included in household surveys either. When it comes to the poorest of the poorest, household surveys are not a good means to study child labor.

Most of the variation in child labor can be explained by household factors, but as I have shown in this thesis, parents are also influenced by their surroundings. To account for country differences, I sometimes included national GDP per capita as a control factor. It may be worthwhile to look at the influence of international agreements, trade or globalization. Following Clark (2011) who has found a child labor increasing effect of foreign direct investment and a child labor decreasing effect for the number of non-governmental institutions in a country, it would be interesting to see if these macro-effects are still there when controlled for the household and district characteristics.

One of the limitations of this work lies in the interpretation of unexpected effects. In the case of this thesis, particularly the effects of patriarchy often are contradictory and sometimes counterintuitive. I explain these by mentioning the literature on different kind of kinship patterns. However, to really understand what is going on, we need stories from up-close. Especially for the relatively unexplored category 'unpaid labor for others' this might be very important. Despite the fact that I have unraveled many of the determining factors of unpaid labor, we still do not know if this work is neighboring help, apprenticeships or other unpaid work. However, this is probably a crucial detail to determine the consequences of the involvement in unpaid labor. On the other hand, results from large scale comparative research – such as my study – may also inspire anthropologists or development practitioners to study whether these patterns are also found in specific regions or countries. Moreover, it might also be worthwhile to further

explore the relationship with patriarchy with other outcomes, such as children's health.

Finally, I hope that the findings in this thesis inspire other researchers interested in child labor to focus more on all forms of unpaid labor, such as housework, family business work and unpaid work for others. During my visit to Turkey in the first part of 2012, I spoke with several child labor experts, which make me realize that, although unpaid work can have a symbolic value or lead to valuable work experience later in life; especially girls, who are relatively most engaged in unpaid child labor, are most vulnerable to miss out on the chance to go to school and to get a better future than their parents.

NOTES

[1] It must be noted that the analyses in these chapters are two separate analyses performed on the Asian and African sub-samples. These effects are therefore not controlled for statistical significance

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Appendix A: Proof Checker Chapter 3

Table A.1 Coefficients of multilevel logistic regression models for children age 8–13 with working

	All	Girls	Boys
	1	2	3
Household factors			
Socio-economic factors			
Education father (years)	-0.018 **		
Education mother (years			
Occupation father			
farm	Ref.		
lower non-farm	-0.115		
upper non-farm			
Mother employed			
Wealth			
Demographic factors			
Sex = girl	0.196		
Age		0.122 **	0.173 **
Father missing		0.119 **	0.016
Mother missing	0.094 **		
Extended family without grandparents	-0.026		
Extended family with grandparents	0.001		
Biological child	-0.064		
Birth order child	-0.081 **		
Birth order quadratic	0.004 *		
Number of sisters	0.034 *		
Number of brothers	0.053 **		
Mother got 1st child under age 18	0.003		
age difference partners	0.001		
Context factors			
Living in rural area	0.100 **		
District level development			
Mean years of male education		0.261	-0.130
Proportion men unskilled manual jobs[1]			
Mean age difference between spouses		-0.121	-0.379 *
Proportion HH with grandparents from father's side			
N	239,120	117,177	121,943

* P<0.05 ** P<0.01

outside the household as dependent variable

Urban	Rural	Urban Girls	Urban Boys	Rural Girls	Rural Boys
4	5	6	7	8	9
-0.030 **	0.015				
		Ref.	Ref.	Ref.	Ref.
		-0.370 **	-0.242 **	0.205 *	-0.289 **
		0.326 **	0.327 **	0.373 **	0.110 *
0.115 **	-0.067 **				
		-0.230	-0.019	-0.397 *	-0.187
		0.042	0.076	0.203 *	0.322 **
0.357 **	0.035				
97,923	141,197	48,078	49,845	69, 099	72, 098

Table A.2 Coefficients of multilevel logistic regression models for children age 8–13 with working

	All	Girls	Boys
	1	2	3
Household factors			
Socio-economic factors			
Education father (years)	-0.011 **		
Education mother (years			
Occupation father			
farm	Ref.		
lower non-farm	-0.056		
upper non-farm			
Mother employed			
Wealth			
Demographic factors			
Sex = girl	0.438 **		
Age		0.115 **	0.186 **
Father missing		0.085 **	0.033
Mother missing	0.086 **		
Extended family without grandparents	-0.006		
Extended family with grandparents	0.015		
Biological child	-0.087 *		
Birth order child	-0.086 **		
Birth order quadratic	0.005 *		
Number of sisters	0.026 *		
Number of brothers	0.044 **		
Mother got 1st child under age 18	0.010		
Age difference partners	0.000		
Context factors			
Living in rural area	0.145 **		
District level development			
Mean years of male education		0.172	-0.143
Proportion men unskilled manual jobs			
Mean age difference between spouses		-0.192	-0.443 **
Proportion HH with grandparents from father's side			
N	223,010	109,489	113,521

* P<0.05 ** P<0.01

outside the household as dependent variable, without Benin

	Urban	Rural	Urban Girls	Urban Boys	Rural Girls	Rural boys
	4	5	6	7	8	9
	-0.041 **	-0.016 **				
			Ref.	Ref.	Ref.	Ref.
			-0.438 **	-0.222 **	0.192 *	-0.330 **
			0.381 **	0.380 **	0.400 **	0.089 *
	-0.074 **	-0.059 **				
			-0.302 *	-0.088	-0.416 *	-0.201
			0.135	0.155	0.181 *	0.312 **
	0.331 **	0.007				
	92,000	131,010	45,175	46,825	64,314	66,696

Table A.3 Coefficients of multilevel logistic regression models for children age 8–13 with working

	All	Girls	Boys
	1	2	3
Household factors			
Socio-economic factors			
Education father (years)	-0.018 **		
Education mother (years			
Occupation father			
farm	Ref.		
lower non-farm	-0.121 **		
upper non-farm			
Mother employed			
Wealth			
Demographic factors			
Sex = girl	0.199 *		
Age		0.127 **	0.180 **
Father missing		0.114 **	0.019
Mother missing	0.099 **		
Extended family without grandparents	-0.031		
Extended family with grandparents	0.001		
Biological child	-0.073 **		
Birth order child	-0.083 **		
Birth order quadratic	0.004 *		
Number of sisters	0.034 *		
Number of brothers	0.054 **		
Mother got 1st child under age 18	0.006		
Age difference partners	0.001		
Context factors			
Living in rural area	0.111 **		
District level development			
Mean years of male education		0.205	-0.188
Proportion men unskilled manual jobs			
Mean age difference between spouses		-0.055	-0.321 *
Proportion HH with grandparents from father's side			
N	238,538	116,883	121,655

* P<0.05 ** P<0.01

outside the household as dependent variable, without Uganda

	Urban	Rural	Urban Girls	Urban Boys	Rural Girls	Rural boys
	4	5	6	7	8	9
	-0.032 **	0.015 **				
			Ref.	Ref.	Ref.	Ref.
			-0.384 **	-0.258 **	0.211 *	-0.303 **
			0.329 **	0.328 **	0.387 **	0.116 **
	-0.117 **	-0.070 **				
			-0.266 *	-0.045	-0.424 *	-0.202
			0.118	0.154	0.278 **	0.398 **
	0.402 **	0.065				
	97,809	140,729	48,020	49,789	68,863	71,866

Table A.4 Coefficients of multilevel logistic regression models for children age 8–13 with working

	All	Girls	Boys
	1	2	3
Household factors			
Socio-economic factors			
Education father (years)	-0.029 **		
Education mother (years			
Occupation father			
farm	Ref.		
lower non-farm	-0.223 **		
upper non-farm			
Mother employed			
Wealth			
Demographic factors			
Sex = girl	0.089		
Age		0.122 **	0.183 **
Father missing		0.159 **	-0.008
Mother missing	0.107 **		
Extended family without grandparents	-0.044 *		
Extended family with grandparents	0.029		
Biological child	-0.076 **		
Birth order child	-0.061 **		
Birth order quadratic	0.003 *		
Number of sisters	0.034 *		
Number of brothers	0.050 **		
Mother got 1st child under age 18	0.022		
Age difference partners	0.000		
Context factors			
Living in rural area	0.067 **		
District level development			
Mean years of male education		0.331 **	-0.096
Proportion men unskilled manual jobs			
Mean age difference between spouses		-0.090	-0.245 *
Proportion HH with grandparents from father's side			
N	165,856	81,712	84,144

* P<0.05 ** P<0.01

outside the household as dependent variable, without India

Urban	Rural	Urban Girls	Urban Boys	Rural Girls	Rural boys
4	5	6	7	8	9
-0.049 **	-0.039 **				
		Ref.	Ref.	Ref.	Ref.
		-0.139	-0.378 **	0.310 *	-0.317 **
		0.303 **	0.294 **	0.442 **	0.117 **
-0.134 **	-0.076 **				
		-0.529 **	-0.210	-0.684 **	-0.364 **
		0.176 *	0.124	0.291 **	0.349 **
0.238 **	0.074				
68,922	96,934	34,221	34,701	47,491	49,443

summary in dutch

SAMENVATTING (SUMMARY IN DUTCH)

Kinderarbeid kent vele gezichten. We denken al snel aan kinderen die voetballen naaien in sweatshops. Maar in de realiteit houden kinderen zich bezig met veel andere soorten werk. Zo werken ze ook vaak in het familiebedrijf of boerderij, in het huishouden of voor buren en andere leden van de gemeenschap.

Kinderarbeid is van alle tijden. Tijdens de industriële revolutie werkten kinderen vaak lange dagen onder vaak gevaarlijke en soms fatale omstandigheden. In die tijd ontstonden de eerste wetten tegen kinderarbeid. Ook kwam er meer aandacht voor onderwijs, wat in de loop van de tijd in veel landen verplicht werd gesteld. In veel landen is er daarom nog nauwelijks sprake van kinderarbeid, maar toch is het probleem nog lang niet uitgeband. Met name in ontwikkelingslanden zijn er nog veel jonge kinderen aan het werk. Ontwikkelingsorganisaties, internationale instanties en nationale regeringen proberen met afspraken, hulp en wetten hier wel wat aan te doen, maar het probleem is hardnekkig. Ondanks al die inspanningen, schatte de International Labor Organisation (ILO) dat er in 2010 wereldwijd 215 miljoen kinderen waren betrokken bij kinderarbeid.

Waarom is dit probleem zo hardnekkig? Een regering kan wel beloven, bijvoorbeeld door middel van het tekenen van een verdrag, zich in te spannen om kinderarbeid te voorkomen, maar als het niet de middelen heeft om wetten te maken en uit te voeren, is dit een wassen neus.

Armoede is een veelgenoemde oorzaak van kinderarbeid. En inderdaad, het zijn vaak de arme kinderen in arme landen die werken. Het kan echter niet alle verschillen verklaren. Recentelijk rapporteerde de ILO dat kinderarbeid is gedaald. Dit valt tegelijk met de wereldwijde financiële crisis. Als armoede de belangrijkste oorzaak is, zouden we in dat geval niet een toename in het aanbod van kinderarbeid moeten verwachten? Aan de andere kant leidt minder internationale handel wellicht ook tot minder vraag naar kinderarbeiders.

DE BIJDRAGE VAN DIT PROEFSCHRIFT

In dit proefschrift wil ik recht doen aan de realiteit van werkende kinderen in ontwikkelingslanden. In veel eerdere studies wordt voornamelijk gekeken naar betaald werk (voor geld of in natura), maar ik kijk ook naar soorten onbetaald werk, zoals huishoudelijk werk, werk voor het familiebedrijf, burenhulp en stages. Voor al deze soorten werk bekijk ik in welke mate kinderen hierin betrokken zijn en waarom ze hierin werken. Het zwaartepunt van de analyses ligt op landen in Afrika en Azië.

Omdat niet alleen de kenmerken van het kind en het gezin, maar ook de directe omgeving waarin het kind opgroeit bepaalt of het kind al dan niet werkt, neem ik beide niveaus in de analyse mee. Veel van de eerdere onderzoeken naar kinderarbeid richten zich op één land of regio. Door kinderen uit meerdere landen tegelijk mee te nemen in de analyse is het mogelijk om te bepalen welke factoren op de beide niveaus van invloed zijn en in welke mate.

Om tot een set toetsbare hypothesen te komen breng ik de bestaande literatuur uit verschillende disciplines samen in een nieuw model. Dat model kan toegepast worden op alle analyseniveaus en soorten kinderarbeid. Door de verschillende vormen van kinderarbeid op deze systematische manier uiteen te zetten en door empirische informatie te geven, kan dit proefschrift een belangrijke bijdrage leveren aan het bestaande onderzoek naar kinderarbeid.

ONDERZOEKSVRAGEN

Met mijn eerste onderzoeksvraag wil ik in kaart brengen hoe omvangrijk het kinderarbeidprobleem is. De eerste vraag luidt daarom als volgt:

1. Hoeveel komt het voor dat kinderen werken in de verschillende vormen van kinderarbeid? Hoeveel uren werken kinderen gemiddeld betaald, in het huishouden, het familiebedrijf en onbetaald buiten het huishouden?

Het tweede doel van mijn proefschrift is het ontwikkelen van een nieuw theoretisch kader. Om dit doel te verwezenlijken moeten we eerst weten hoe factoren op het niveau van het huishouden kinderarbeid beïnvloeden. De ouders van deze kinderen zullen daarnaast ook kijken naar de omgeving. Als er geen vraag is naar kinderarbeid, zullen ze niet gaan werken. Daarnaast worden ouders beïnvloed door culturele patronen, bijvoorbeeld de rol van vrouwen in de economie. Mijn tweede vraag is daarom opgedeeld in twee delen:

2. A: Wat is het effect van de kenmerken van het huishouden waarin het kind leeft op de deelname aan kinderarbeid.

2. B. Wat is het effect van contextkenmerken op de deelname aan kinderarbeid?

Ouders hebben verschillende toekomstbeelden van hun zonen en dochters. Van jongens wordt vaker verwacht het familiebedrijf of boerderij over te nemen en van meisjes huisvrouw te worden. Om ze voor te bereiden op hun toekomstige rol, zullen kinderen op jonge leeftijd vaak sekse-specifieke werkzaamheden uitvoeren. Jongens zijn ook vaker bezig met zwaardere taken en leren vaardigheden die ze later goed kunnen gebruiken. Meisjes worden vaker verwacht te helpen in het huishouden en bij de zorg voor hun broertjes en zusjes. Deze verschillen worden ook weerspiegeld in betaald werk. Meisjes mogen soms alleen maar binnenshuis werken. Als ze al buitenshuis werken is het vaak in verschillende sectoren en taken. Jongens zijn bijvoorbeeld vaker werkzaam in de visserij en meisjes meer in de textielindustrie. Om in te gaan op deze verschillen luidt de derde vraag als volgt:

3. In welke mate verschillen de effecten van huishoud- en contextfactoren tussen jongens en meisjes?

Huishoudfactoren hebben niet alleen een direct effect op kinderarbeid, maar zijn ook afhankelijk van de context. Het vierde doel van dit proefschrift is begrijpen hoe de effecten van kenmerken van het huishouden beïnvloed worden door de context waarin het kind leeft. Omdat er veel verschillen zijn in de ontwikkeling, infrastructuur en cultuur van rurale en urbane gebieden, zal ik me vooral richten op de verschillen tussen deze gebieden. De vierde onderzoeksvraag leest daarom als volgt:

4. In welke mate verschillen de de effecten van huishoud- en contextfactoren tussen rurale en urbane gebieden?

Ik ga er niet zomaar vanuit dat de factoren die bepalen of een kind werkt hetzelfde zijn voor alle delen van de wereld. Omdat eerder onderzoek suggereert dat er veel verschillen zijn in de oorzaken, omvang en soorten kinderarbeid in Afrika en Azië, zal ik verschillende analyses doen voor deze twee delen van de wereld in het tweede deel van dit boek. De vijfde en laatste onderzoeksvraag luidt daarom als volgt:

5. In welke mate verschillen de de effecten van huishoud- en contextfactoren tussen Afrika en Azië?

DE DATA

Kwantitatieve onderzoeken zoals deze worden mogelijk gemaakt door de beschikbaarheid van data. Vroege landenvergelijkende studies werden mogelijk gemaakt door LABORSTA van de ILO. Helaas zat onbetaald werk in het huishouden niet in deze statistieken waardoor deze eerdere studies het kinderarbeidprobleem onderschatten. Sinds de jaren negentig van de vorige eeuw zijn er meer en meer data beschikbaar gekomen voor ontwikkelingslanden die grootschalig landenvergelijkend onderzoek mogelijk maken.

In deze studie maak ik gebruik van data van de Demographic and Health Surveys (DHS) and UNICEF's Multiple Indicator Surveys (MICS). Omdat de MICS erg gedetailleerde vragen stellen over de bezigheden en tijdsbesteding, zijn de MICS de meest nuttige bron om kinderarbeid te bestuderen. Ook zijn deze vragen hetzelfde voor elk bestudeerd land. Het grootste nadeel van de MICS is dat ze, in tegenstelling tot de DHS, geen informatie over het beroep van de ouders bevatten.

Om het theoretische model aan een eerste test te onderwerpen gebruik ik data van de DHS voor 18 landen. In het tweede deel van mijn proefschrift gebruik ik de gedetailleerde data van MICS. Daarin bepaal ik voor 16 landen in Azië en Afrika welke factoren ervoor zorgen dat een kind zich bezighoudt met de verschillende soorten kinderarbeid.

INDELING VAN HET PROEFSCHRIFT

Mijn proefschrift is als volgt ingedeeld. In hoofdstuk 2 geef ik een beschrijving van de data en methoden. Het theoretisch model word beschreven in hoofdstuk 3. In dit hoofdstuk wordt het model ook onderworpen aan een eerste empirische test die focust

op de deelname van kinderen aan betaald werk. Dit doe ik door middel van multilevel analyse op data voor 120 kinderen die leven in 221 districten in 18 ontwikkelingslanden in Latijns-Amerika, Afrika en India.

Deel 2 (hoofdstuk 4 tot 7) richt zich op kinderarbeid in Azië en Afrika. In hoofdstuk 4 gebruik ik data voor ongeveer 178.000 kinderen in 16 landen om een overzicht te geven van de deelname aan betaald werk, huishoudelijk werk, werken in het familiebedrijf of boerderij en onbetaald werk buiten het huishouden. Deze data zijn afkomstig van MICS. In hoofdstuk 5 tot en met 7 gebruik ik het theoretisch model om de verschillen te verklaren in gewerkte uren in deze vormen van kinderarbeid. Hoofdstuk 5 gaat over betaald werk. In hoofdstuk 6 verklaar ik de drijvende krachten achter de deelname aan huishoudelijk werk en werken in het familiebedrijf of boerderij. Hoofdstuk 7 gaat over onbetaald werk buiten het huishouden.

In deel 3 van dit proefschrift reflecteer ik op mijn bevindingen. Ik beschrijf de relatie tussen kinderarbeid en schooldeelname in hoofdstuk 8. In hoofdstuk 9 geef ik mijn conclusies en beantwoord ik de vijf onderzoeksvragen. Vervolgens geef ik aanbevelingen voor beleidsmakers en vervolgonderzoek.

HET MODEL

In hoofdstuk 3 breng ik theorieën vanuit verschillende disciplines samen in 1 model (gebaseerd op Spierings, Smits & Verloo, 2010). De verschillende factoren zijn gegroepeerd in drie verschillende soorten factoren: (1) (hulp)bronnen, (2) cultuur, en (3) structurele factoren. Deze verschillende soorten factoren kunnen van invloed zijn op verschillende analyseniveaus, namelijk op het niveau van het kind en gezin en van de omgeving waarin het kind opgroeit. Factoren op een hoger niveau kunnen interacteren met factoren op een lager niveau.

(Hulp)bronnen zijn: De middelen waarmee een huishouden zijn leden kan voorzien in eten, beschutting, opleiding en ontwikkeling. Contextlevelbronnen zijn bijvoorbeeld het ontwikkelings- en opleidingsniveau van de gemeenschap. Ze zorgen ervoor dat ouders hun kinderen naar school kunnen sturen en verhogen het begrip dat onderwijs helpt bij het vergaren van menselijk kapitaal.
Structuur verwijst naar de familiestructuur, zoals een extended family, aantal broertjes en zusjes en naar eigenschappen van de context, zoals schoolvoorzieningen en eigenschappen van de arbeidsmarkt.
Cultuur omvat opvattingen over kinderen, socialisatie en de rol van vrouwen in de samenleving. Zo meet ik bijvoorbeeld traditionele opvattingen op het huishoudniveau met het leeftijdsverschil in partners. Op het niveau van de context, beargumenteer ik dat patriarchaat leidt tot verschillen in de mate waarin kinderen deelnemen aan kinderarbeid.

RESULTATEN

De resultaten in dit proefschrift laten zien dat kinderen zich bezig houden met verschillende soorten werk. Samenvattend kunnen we zeggen dat kinderen voornamelijk onbetaald werk voor het eigen huishouden verrichten. Daarnaast zijn meisjes vaker betrokken bij huishoudelijk werk en jongens werken meer voor het familiebedrijf of de boerderij. Aan de andere kant lijkt het zo te zijn dat áls kinderen zich bezig houden met betaald werk, ze gemiddeld lange dagen maken.

(Hulp)bronnen zijn van de huishoudkenmerken een belangrijke verklarende factor. Met name welvaart en een hogere opleiding van de ouders verminderen de deelname aan kinderarbeid. Daarnaast zorgt de beschikbaarheid van basisvoorzieningen zoals elektriciteit en water ervoor dat kinderen minder in het huishouden of voor het familiebedrijf hoeven te werken. Van de structurele factoren is het voornamelijk de gezinsstructuur die ervoor zorgt dat taken binnen het gezin verdeeld worden. Kinderen die leven in een extended family met opa's en oma's of neven en nichten werken vaak minder. Daarnaast werken kinderen meer naarmate ze meer broers en zussen hebben. De gemeten culturele factoren op het huishoudniveau hebben geen effect.

Het ontwikkelingsniveau van het district is een hulpbron op contextniveau dat kinderarbeid op verschillende manieren beïnvloedt. Het vermindert de deelname aan kinderarbeid in rurale gebieden. Daarnaast werken kinderen minder als ze in gebieden leven met betere schoolvoorzieningen. Dit noem ik zowel een hulpbronnen- als structureel effect. Hoewel cultuur geen effect heeft op het gezinsniveau, is het effect van het patriarchaat aanzienlijk. Het effect is wel verschillend voor kinderen in Afrika en Azië, wat duidt op verschillende vormen van het patriarchaat. In Afrika hebben vrouwen meer autonomie en zeggenschap over de welvaart van hun kinderen.

Deze laatste bevinding illustreert het belang van het onderscheiden van verschillende gebieden en het bestuderen van interactie-effecten tussen rurale en urbane gebieden. De interactie-analyses laten zien dat de effecten niet altijd hetzelfde zijn in alle contexten. Beleidsmakers moeten zich hier met name richten op de onbedoelde effecten. Bijvoorbeeld: de beschikbaarheid van basisvoorzieningen vermindert de tijd dat kinderen besteden aan huishoudelijk werk en werk voor het familiebedrijf. Aan de andere kant laat ik zien dat in Azië, de beschikbaarheid van basisvoorzieningen kan leiden tot meer bedrijvigheid en onbetaald werk. Dit kunnen stages zijn die goed zijn voor de loopbaan van het kind. Is hier echter geen goed toezicht op, bestaat de kans dat deze kinderen uitgebuit worden.

curriculum vitae

CURRICULUM VITAE

Ellen Webbink was born on October 21, 1977 in Almelo, The Netherlands. She studied sociology at Radboud University Nijmegen (RUN) and graduated in 2002. She joined the department of Economics at the Nijmegen School of Management at the same university in 2004. As a junior researcher she collaborated in the construction of the Database Developing World (www.datdevworld.org) and assisted in various undergraduate and master courses. In 2006 she started working on her doctoral dissertation. She was awarded the Dr. I.B.M. Frye Stipendium for promising female researchers in 2009. This grant allowed her to work at the Middle East Technical University in Ankara, Turkey for three months in 2012. From 2010 to 2012, Ellen also worked at The International Institute of Social Studies (ISS) of Erasmus University as the database manager for the Indices of Social Development (www.IndSocDev.org).

Ellen has published various scientific publications in, amongst others, World Development and Social Indicators Research and presented her work at conferences all over the world.

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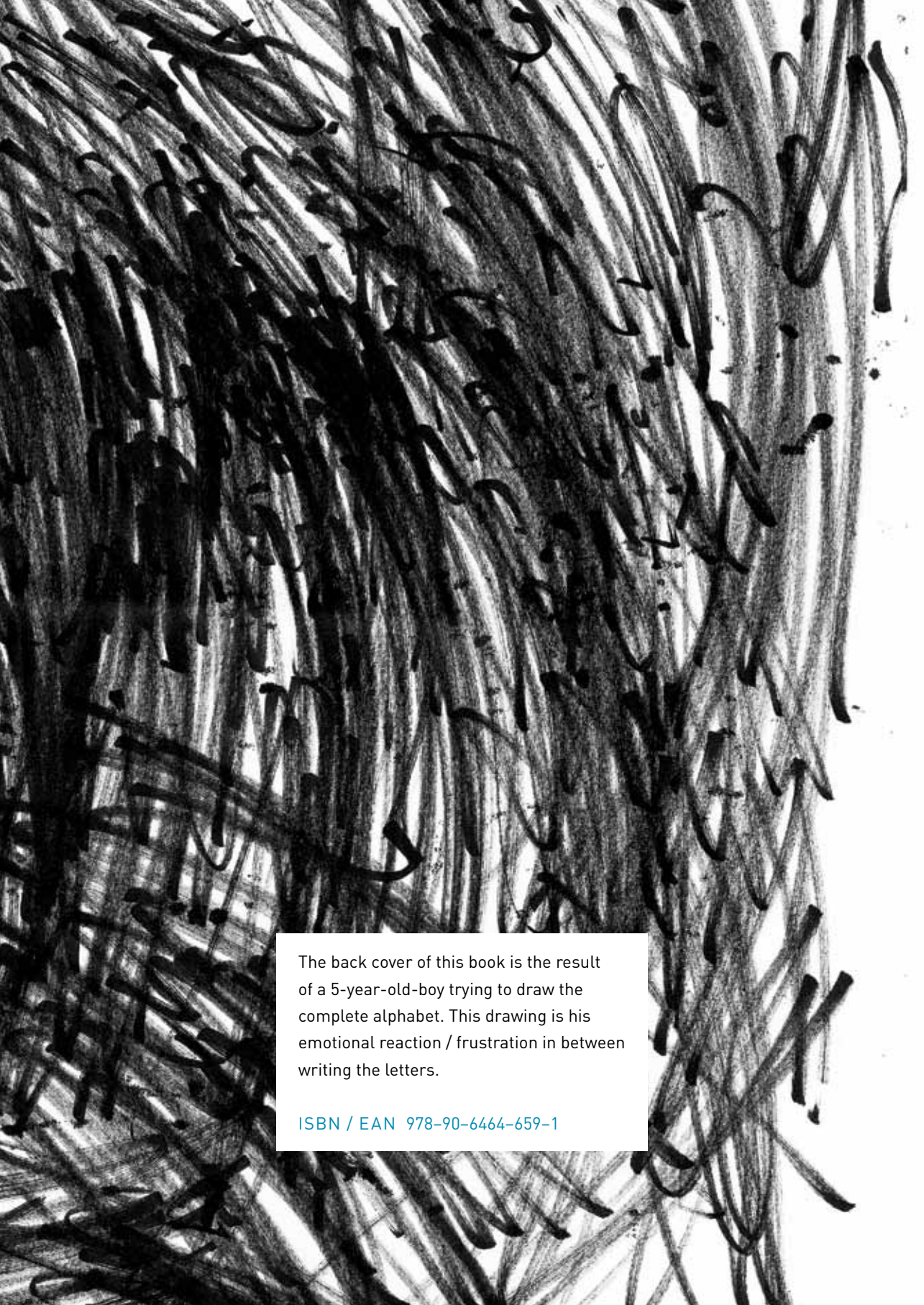

The back cover of this book is the result of a 5-year-old-boy trying to draw the complete alphabet. This drawing is his emotional reaction / frustration in between writing the letters.

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